MARKET PROSPECTS FOR WASHINGTON APPLES AND CERTAIN OTHER FRUITS

By

Wendell Calhoun and Forrest E. Scott

A Report To The
United States Department of the Interior
Bureau of Reclamation
Region 1 Boise, Idaho

From The
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UNITED STATES DEPARTMENT OF AGRICULTURE

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By Wendell Calhoun and Forrest E. Scott, Agricultural Economists

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INTRODUCTION

Fruit Production

Total production of all fruit in the United States has doubled during the past 25 years. Examination of figure 1 shows that nearly all of the increase has been in citrus fruits.

The combined production of the fruits other than citrus has shown only a slight upward trend since the early 1920's. Some shifts have occurred within this group, such as an increase in pears and a decrease in apples, but the total has shown a relatively minor increase. The group as a whole will face increasingly strong competition from oranges and grapefruit.

Citrus fruits have climbed from about 1.5 million tons in the early 1920's to 7.5 million in 1945. Oranges, grapefruit, and lemons now almost equal the combined production of all other fruits. Furthermore, citrus production is almost certain to continue rising to much higher levels. In California and Florida, orange and grapefruit trees do not reach maximum production until about 40 years of age, and the average productive life of commercial groves is expected to be around twice that age. In 1944, about 56 percent of all the orange and grapefruit trees in the United States were less than 20 years old, and slightly more than 80 percent were still under 30 years of age. Consequently it has been estimated that <u>average</u> annual citrus production may exceed 10 million tons within the next two decades, unless there is heavy loss of trees from freeze or other natural causes, or widespread abandonment. 1/ During some seasons, probable future production will greatly exceed the

1/ "Potential Supply of Citrus Fruits," by Wendell Calhoun, Mary Montgomery, and Marion Clawson. Bureau of Agricultural Economics, Berkeley, California. (Processed.)

estimated 10-million average. During the 1940-44 period production averaged about 6.2 million tons, and during 1935-39 about 4.2 million tons.

Fruit Consumption

Fresh Fruits

The per capita consumption of all fresh fruits (as distinct from utilization of fruit in all forms) has shown no change in trend in the United States during the last 35 years (fig. 2). Wide seasonal fluctuations have occurred, according to variation in supplies, but the average consumption has continued to be mostly within the range of 130 and 160 pounds a year.

The only individual fruits for which there have been marked changes in per capita consumption are apples, oranges, and grapefruit (fig. 2 and 3). Apples have declined from an average of around 70 pounds during the period 1910-15 to a fairly uniform level of only 40 pounds per capita during the last 20 years. Meantime, per capita consumption of oranges and grapefruit together increased from about 15 to 55 pounds, and has fully made up for the decrease in apples.

Canned and Dried Fruits

Per capita consumption of canned fruits has increased steadily and rapidly since 1910 (fig. 4). In addition, there has been an even greater increase in canned fruit juices and tomato juice, which also compete with fresh fruit.

Dried fruits have shown no important consumption trends during the last two decades. A large proportion of the dried fruits were exported before the war, and total future demand will depend largely on foreign trade.

APPLES

Apples were the major fruit crop of the United States until recent years, when oranges have taken the lead. Apples have a wide adaptation to climatic and other conditions, and the widespread planting of apple trees (or seeds) long has been an American tradition. But as the years passed it was found that even though apples could be grown in practically all parts of the country, many areas were much better suited to them than others because of the yields obtained, the quality of the fruit, or other factors. Many of the early plantings were not of desirable varieties, and were pulled out or abandoned for that reason. Returns from small farm-orchards did not justify the equipment, effort, and expense necessary to combat effectively the insect pests, particularly the ever-present coddling moth. Production in many areas brought low returns, or became mostly unmarketable.

Commercial Production

As a result of these and other conditions, specialized "commercial" producing districts gradually developed, where the more favorable growing conditions prevailed. Among these, competition of yields, quality, and production costs was still active, and many of the areas which at one time assumed commercial importance later were replaced by others. Thus in Washington, orchards in the lower Yakima and Wenatchee valleys were removed because they could not compete with plantings at the higher elevations. In several places in this State, and in many other States, a line of old apple trees along a fence row, or scattered survivors on a hillside, are reminders of once-prominent orchard districts.

The decline of extensive early apple plantings and the evolution of a few highly specialized producing areas, have been documented in a

survey of tree numbers in New York State. 2/ It has had since Colonial days, (and still had in 1940), the greatest number of apple trees of any State. The number of its bearing trees enumerated by the Census declined from 15,055,000 in 1900 to 7,684,000 in 1935, and during that time two important commercial areas have emerged. One of these is near the shore of Lake Ontario and the other in the Hudson River Valley. The number of trees of bearing age in these two districts declined only 9 percent from 1900 to 1935, whereas in the remainder of the State the decrease was 70 percent.

Decline in Total Numbers of Bearing Trees

For the entire United States the number of bearing apple trees enumerated by the Census declined from 151 million trees in 1910 to 58 million in 1940 (figure 5). References to this 60-percent decline frequently give the impression that the United States is going out of the apple business and that a shortage of this fruit is likely soon to be in prospect.

What has happened for the country as a whole is comparable to the situation in New York State. Eight States (Washington, California, Michigan, Ohio, New York, Pennsylvania, Virginia, West Virginia) have emerged as the major producers, and for more than a decade have been producing two-thirds of the apple crop. Average production in this group of States has held at a fairly constant level, until the disastrous season of 1945 when the crop was a near failure throughout the East and Midwest (fig. 5). Another 8 States (Oregon, Idaho, Colorado, Illinois, Indiana, Maryland, New Jersey, and Massachusetts, which in this report are referred to as

2/ "Estimated Numbers of Fruit Trees and Grape Vines in New York," U.S. Department of Agriculture and New York Department of Agriculture and Markets. Albany, June 1937.

the "8 minor States") have also been consistent producers.

These two groups of States combined - the "16 principal States" - have for more than a decade produced an average of 80 percent of all the apples grown in this country. A decline in tree numbers has taken place in these States (fig. 6) but the decrease has been at a very much smaller rate than in the other 30 States. (46 States - all but North Dakota and Florida - have been listed in the U. S. Department of Agriculture records of total apple production.)

The total annual production of apples in the United States and in the 8 major producing States, from 1909 to 1938, is shown in figure 5 and in tables 1 and 3. The same information for the 8 minor States appears in table 2. Since 1938 the production estimates have included only the production in the commercial apple areas of each State. But the numbers of trees reported by the Census include all apple trees. Therefore comparison between tree numbers and production can be made only on the basis of total production in all areas. As the estimates of the commercial crop began with the season of 1934, both series - total production and commercial crop - are available for the 5-year period 1934-38. For the purpose of a general comparison between total numbers of bearing trees and production from all trees, an approximation of total production in the principal States has been computed for the seasons 1939-45. This was done by adding to the annual estimates of the commercial crop for each of the principal States and the United States, the same percentage that total production in each had exceeded the commercial crop during the 5-year period 1934-38. The approximate total production thus computed for the period 1939-45 is shown on figure 5, and on later charts, by the broken line.

Apple trees have a pronounced tendency toward "alternate bearing," that is, to produce a succession of heavy and light crops in alternate years. The extent differs by varieties and by producing areas, and is much more pronounced in the East and Midwest than in the Northwest. Figure 5 indicates the difficulty of observing long-time production trends from the seasonal figures. Accordingly, 6-year moving averages have been computed from the seasonal data. The use of an even number of years tends to offset the effects of alternate bearing, as each 6-year average is likely to include equal numbers of large crop and small crop seasons.

In figure 6 the 6-year moving averages of production are shown for the United States, the 16 principal States, and the 8 major States, together with the number of bearing trees enumerated by the Census from 1910 to 1940 (table 5). This figure indicates that the decline in national apple production has by no means been proportional to the decline in tree numbers. A sharp decrease has taken place in 30 States, but the 16 principal producing States have held fairly constant at around 125 million bushels per year.

In figure 7 the same type of information is shown as in figures 5 and 6, but the 16 principal producing States have been grouped into 5 western and 11 eastern States. Figure 8 gives the same information separately for the two largest producing States - Washington and New York - and figure 9 shows the same for West Virginia, Pennsylvania, Virginia, and Michigan.

One of the striking comparisons shown in these figures is the much smaller number of bearing trees in the western States in proportion to apple production than in the East. This is merely another way of saying that yields are much higher in the western producing areas. Also the

variations in production from season to season have been much narrower in the West than in the East.

The Short Crop of 1945

In connection with the several charts, it should be noted that the recent sharp decline in the averages of apple production was the result of unfavorable weather conditions throughout the East and Midwest during 1945. An unseasonably warm March of that year advanced fruit buds, and trees in the eastern and central States bloomed from 2 to 4 weeks earlier than usual. Low temperatures followed and killed much of the bloom. Rain reduced pollination. As a result, apples were a near failure and the harvest was the smallest on record in all the principal producing States east of the Mississippi River. In the spring of 1946 conditions again were unfavorable, although not as serious as during the preceding season, and the condition of the crop on June 1 indicated another crop somewhat below average.

The seasonal losses of crops do not necessarily represent a decreasing trend in production, for large crops will again be in prospect when weather conditions are more favorable. The very small crop of 1945 was of course far below market demands. With another below-average crop in prospect for 1946, the supply of apples will have been short for two successive seasons. This is likely to develop a belief on the part of some growers and handlers of apples that national production has become inadequate, and cause a wave of new plantings. An expansion of plantings will be justified in some areas, but the long-time prospect which is involved in the planting of apple trees should not be unduly influenced by the current unsatisfied demand and high prices for apples, which are caused by unseasonable weather combined with a period of high

consumer incomes.

Rate of Plantings

The rate of new plantings in the commercial apple areas will be a major influence in future tree numbers and production. If the average length of life of apple trees is 40 years, the planting each year of $2\frac{1}{2}$ percent of the total number of trees would represent a long-term maintenance of acreage. Table 6 lists the number of apple trees of nonbearing age enumerated by the Census in 1930, 1935, and 1940, and the percent that the nonbearing trees in 1940 were of total trees that year. If the nonbearing trees enumerated by the Census included all those 5 years old and younger, they represented $12\frac{1}{2}$ percent ($2\frac{1}{2}$ percent times five) of the total number of trees. If they included all those under 7 years of age, they represented 15 percent of all trees. As a long-time average, such proportions of young trees would maintain a constant number of trees (if the average age of all trees is 40 years).

Fifteen percent of all apple trees enumerated in the Census of 1940 were classed as nonbearing (table 6). There was a wide difference, however, between the eastern and western States. In the 11 principal eastern producing States the percentage of young (nonbearing) trees averaged 17 percent of all trees enumerated. In the five principal western States only 8 percent of the trees were classed as nonbearing. As indicated, 17 percent of young trees is sufficient to maintain a constant acreage as a long-time average, providing these young trees are cared for and developed into producing orchards. Some of the plantings will not be so developed, but the evidence does not indicate that the principal producing States of the East and the Midwest are necessarily losing in total numbers of trees. In the western States, the plantings

during the 5 or 6 years preceding the 1940 Census were only about half the number required for long-time replacements. Since 1940 the plantings may have increased somewhat.

Locations of the new plantings will have much to do with future apple production. If the new plantings are mainly in the established commercial areas, it is to be expected that they will be well cared for and developed into commercial producers. Those that are not planted in commercial areas are not likely to contribute so much to the total apple production of future years.

This discussion on rates of planting applies to long-term averages. Lack of plantings over considerable periods will not mean reduction in the number of trees until those now standing reach the age of decline and removal. Thus areas in which most of the trees are under 30 years of age would face little loss in numbers for another decade or longer, depending on age of removal. Before such removals begin, however, an accelerated planting program would be necessary to maintain acreage and future production.

Washington Apples

Apple production in the State of Washington increased very rapidly from 1909 to 1921, and at a less rapid rate to 1930 when a peak was reached (fig. 8). Some decline has taken place since. Much of the peak came from orchards that have since been removed, in the lower Yakima Valley, the southern part of the Wenatchee District, and a few other orchard areas in the State which have now lost commercial importance. Production of more recent years has come principally from areas where a rather large proportion of the trees have not yet reached full bearing. Therefore it is possible that the downward trend that took place in the State's production between 1930 and 1940 may now have been reversed, and that

somewhat larger crops may again be in prospect. In addition to larger bearing capacity of the growing trees, larger yields can be expected as a result of the better care given the orchards during years of good returns from the fruit.

Most of the apple production in the Northwest is of Delicious and Winesap varieties (table 4). These are particularly concentrated in the Wenatchee and Yakima areas where together they make up more than 80 percent of total apple production.

Information is not available on the current numbers of trees by variety and by age, but significant approximations can be made from earlier surveys. A tree-fruit survey of the State was made in 1936. By that time the greater part of the tree removals in the lower Yakima Valley had already occurred. Some trees in the entire Yakima area have been removed since 1936 of course but perhaps as many of the younger trees planted as fillers have been taken out as older trees retired because of age. Therefore, although the 1936 survey is not now accurate as to actual number of trees, it still indicates the proportions of the various varieties by age groups.

In the Wenatchee area, the major tree-removal program did not take place until after 1936, hence the survey of that year is of little value in indicating present tree numbers. A special tree-fruit survey of the orchard areas in north-central Washington was initiated in 1941 and was completed for some communities. The data from this survey have not been fully tabulated but are available for nine communities in the Wenatchee-Okanogan area, four in the lower valley, and five in the upper. Plantings by varieties and age differ between districts, but the averages of these nine communities perhaps represent a fairly good sample of the

entire district. Accordingly they have been applied to the estimates of total acreage in the Wenatchee-Okanogan area, to obtain an approximation of the numbers of Delicious and Winesap trees by 10-year age groups. These in turn have been combined with similar information for the Yakima area from the tree-fruit survey of 1936. The results are shown in figure 10.

It must be recognized that this figure does not accurately indicate the numbers of trees in the respective groups, but probably it is approximately correct as to the proportions of the two varieties by ages. No attempt has been made to indicate the number of trees less than 7 years old. Therefore, the proportions shown would correspond roughly with the numbers of bearing trees in 1946.

Figure 10 indicates that nearly half of all the bearing Delicious trees in the Wenatchee-Okanogan and Yakima districts combined were planted during the 1920's, and in 1946 are 17 to 26 years old. Nearly one-fourth were planted after 1930, and are now from 7 to 16 years old, so about three-fourths of the bearing Delicious are less than 27 years. Probably not more than 5 percent of this variety are now more than 36 years old.

Of the Winesap trees now standing, the heaviest plantings were made during the period 1910-20 and are now 27 to 36 years of age. This group probably represents nearly half of Winesap trees now standing, and possibly another 10 percent are over 36 years. Perhaps a third are in the 17-26 year old group, and 10 percent in the 7-16 year group.

Average length of productive life of commercial apple orchards in Washington was formerly considered to be around 40 years. The age at which they become unprofitable varies widely according to the location and the soil, to current economic conditions, and, to a large extent,

on the efficiency of the grower in pruning and in general care. Some orchards will be carried to much older ages, and some necessarily will go out earlier. As a general average for the two major commercial areas, however, 40 years is probably too low with the knowledge that has been gained from the experience of the last three decades, and the methods of orchard care and maintenance which have been rather generally adopted. Indications are that the average productive life of commercial orchards in the present producing areas may be approaching 50 years.

On the basis of the approximations shown in figure 10 a large part of the present Winesap trees probably will go out of production during the next 10 to 15 years. Removals of Delicious because of age factors are not likely to occur until farther in the future.

Northwestern Shipments by Varieties

The combined seasonal shipments of Winesap and Delicious apples from Washington, the Hood River section of Oregon, and Idaho, by seasons 1924-25 through 1944-45 are shown in figure 11. Shipments of Winesaps have declined since 1930, mainly, of course, because of the heavy removal of that variety from the lower Yakima Valley. The volume of production and shipments of this variety probably has been stabilized temporarily in the present producing districts, but from the approximate age distribution of existing orchards (fig. 10) it seems probable that average Winesap production will decrease further within a few years. Trees in the 17-26 year group will increase further in bearing capacity, but production will begin to decline rather soon from the older age groups which comprise the major part of the plantings.

Combined shipments of Common and Red Delicious have increased steadily and rapidly during the last 20 years. The approximate age

distribution of present trees shown in figure 10 indicates that the upward trend in Delicious production will continue, because a large part of the trees of this variety have not attained maximum bearing capacity, and decline from over-age is not likely to become important for another 10 to 15 years.

Market Distribution of Washington Apples

Distribution of Washington apples by regions during the last 20 years is indicated in figures 12, 13, and 14 and in tables 7 and 8. These are based upon the carlot unload reports of the U.S. Department of Agriculture, which give the number of carloads of Washington apples unloaded in specified cities by years. The number of cities covered by these unload reports have varied. The maximum number was 66 cities, for which reports were obtained during the period 1927-39 inclusive. Out of this list the records of 61 cities have been used as pertinent for a study of regional distribution. The five excluded are Portland, Seattle, Spokane, Salt Lake City, and Denver. The rail unloads in the 3 Northwest cities are not representative of local consumption because much of their fruit moves by motortruck from the producing areas. Also unloads at Seattle and Portland included large quantities for export. Unloads at Denver and Salt Lake City are relatively small, and have little significance in the way of regional distribution.

The 61 cities on which the study is based are listed in table 7. These have been divided into the regional areas of Northeast, North Central, South, and California, as shown in figure 12.

In the California markets a large proportion of the Washington apple receipts are by motortruck. Records of truck receipts are available for these markets, and are included in the accompanying tables and charts. Truck receipts of Washington's apples have been nonexistent or

of slight importance in any other of the 61 markets, because of geographic location. Hence the carlot unload figures which are used represent rather accurately the volume of apples used in and distributed from the cities indicated.

To obtain comparisons of the distribution over a longer period than provided by the available data for the 61 cities, the probable totals in these cities have been projected back to 1923 and up to 1944 on the basis of unloads in 20 cities for which information is available throughout the entire 1923-44 period. These 20 cities (table 7) are in most cases the larger markets. The combined unloads of those in each region bore a fairly constant relationship to the corresponding 61-city groups during the 1927-39 period (table 8). Accordingly the totals for the other years were assumed to have represented approximately similar proportions of the Washington shipments.

Figure 13 is based upon the number of cars unloaded annually, but because these differ rather widely from year to year the chart represents a 4-year moving average. For comparison, 4-year moving averages of the Washington shipments (on a calendar year rather than seasonal basis) are also shown on this chart. The total unloads declined considerably after 1930, which tends to obscure the relationships between the different areas. Therefore in figure 14 the 4-year average unloads by regions are compared on the basis of the percent that they were of the total unloads during the corresponding period.

Unloads of Washington apples in the Northeast (east and north of Pittsburgh and Washington) have declined steadily since 1930, from around 40 percent to 20 percent of the unloads in 61 cities. This decline in the major markets of the Northeast has been accompanied by increases in

the Southern States and in the two California cities. The north central area, from the Great Plains to Ohio, has retained almost a constant percentage of the unloads, although this represented a considerable decline in actual volume (fig. 13). In the Southern States and in California the consumption of Washington apples showed a material increase in actual quantity as well as a combined increase of approximately one-fourth in percentage of the total.

Formerly the sentiment in the Northwest was that the large eastern markets were the keystone of its fruit industry, because of the premiums which those markets paid for fine-quality fruit. Therefore a 50-percent decline during the last 15 years in the quantity of fruit sent to the markets from Pittsburgh east represents a major and significant change in the market outlets.

Reasons for this change rest both with northwestern apples themselves and with the competing apples from other sections. The major reasons can perhaps be summarized under three major headings: (1) improved varieties grown in the Eastern States, (2) improved quality and pack of the marketings from eastern areas, and (3) dissatisfaction with the condition of northwestern fruit when it reaches consumers.

Throughout the eastern apple districts, new and more popular varieties of apples such as Stayman, Delicious, and McIntosh are being grown in increasing quantities. Furthermore, eastern apples are being graded and packed more in accordance with the quality methods of merchandising on which the northwestern fruit industry has been based. Imitation may be the sincerest form of flattery, but in the merchandising of fruits and vegetables it is also one of the surest forms of effective competition. Twenty years ago fruit from the Northwest was far above

the general quality of other offerings in eastern markets. In recent years the advantage in quality has narrowed.

In both wholesale and retail distribution of fruits and vegetables in metropolitan areas, apples are usually associated with the semi-perishable or "hardware" products such as citrus fruit, potatoes, and onions. The retailer is likely to buy these in quantities sufficient to supply his outlet for from 1 to several weeks, whereas other products are bought from day to day or at least twice each week. Unfortunately for both the producer and consumer of apples, although this fruit may retain a fairly good outward appearance, it loses much in flavor and "snap" under long exposure in the retail display. The rapidity of deterioration is very different as between varieties; the Delicious is not one of the longer keepers. Northwestern Delicious probably have suffered as much as any other variety from slow distribution after they reach the consuming markets. Moreover, many of them are not in prime condition when they arrive.

These conditions are not new to the industry. Nonetheless, in view of the importance of the Delicious apple in the Northwestern fruit areas, the industry faces the undeniable fact that it has lost much of its outlet in its former premium markets. More aggressive merchandising in the Southern States, and an increasing population on the Pacific coast have taken up part of the difference in volume. But these new outlets may not bring returns per box of fruit comparable with those formerly obtained in eastern markets.

Apple Prices

The season average prices per bushel received by growers, for apples, in the State of Washington and in the United States as a whole, from 1909

to 1944, are found in figure 15 and table 9. These represent for each season a single weighted average price for all varieties, grades, and sizes sold for fresh market and for processing. While such averages give no indication of the range in prices received for the various classes of apples, they do indicate the comparative returns from one season to another.

From 1909, the beginning of the period shown, until 1928, the average price received by growers in Washington was materially above the average price received by growers in the entire United States. Since 1928, average returns in Washington have been very close to the average for the country as a whole. Washington growers have largely lost the premiums they once received.

During the decades of the 1920's, the average seasonal prices fluctuated rather widely, from 90 cents to $1.70 per bushel. In the early 1930's they dropped sharply to around 60 cents, and during the decade of the 1930's ranged mostly 60 to 90 cents per bushel.

Since 1940 prices have risen sharply. This has been true for all the principal fruits (fig. 16). In figure 16 the average price received by farmers during the 1909-14 period is shown as 100 percent. Prices during 1935-39 were below this point of comparison. From the middle of 1943 through 1945 farmers' returns from fruit ranged from 2 to 2½ times the 1909-14 level, and a higher proportion of the 1935-39 level.

Future prices for apples will depend on many factors, of which the supply of apples will be only one. Levels of economic activity and consumer incomes will be of even more importance. Other factors will be the supplies and prices of competitive fruits. Oranges and grapefruit are major competitors, particularly with the fall and winter varieties of apples.

The production of grapefruit and oranges in the United States from 1919 to 1944, and the season average returns to growers from each fruit for fresh market and for processing, are shown in figure 17. The equivalent on-tree returns for fresh market ranged between $1.50 and $3.50 per box for oranges during the 1920's, and mostly $1-$2 per box for grapefruit. The volume of citrus fruit processed during that period was very small, as most of the production was absorbed by the fresh markets.

Prices dropped sharply in 1930, and thereafter remained at much lower levels. Production increased sharply and steadily after 1935. Production of grapefruit increased far in excess of fresh-market outlets, and by 1940 slightly more than one-half of the grapefruit crop was being processed, mostly as canned juice. The difference between prices to growers for fresh and for processed grapefruit declined to a narrow margin, for all the fruit was marketed fresh that would bring net returns to growers above the processing price. A smaller proportion of oranges has been processed, partly because of lack of a satisfactory processing method, but the margin has also narrowed between oranges for fresh market and for processing. With the large volume of citrus fruits in prospect for many years to come, it appears that citrus prices to growers will hold relatively near the levels established by the markets for the processed fruit.

The citrus situation is particularly significant to apple growers, because of the direct competition. The future average price of apples probably will conform in part to citrus prices, and only in part to the factors that determined apple prices before the big jump in citrus production during the last 10 years.

Under conditions of supply and demand for apples and competitive fruits comparable to those that prevailed before 1930, and under conditions

of moderate to full employment, the future United States farm price of apples might be expected to range from $1.20 to $1.50 per bushel. In competition with the current and prospective supplies of oranges and grapefruit, however, it seems probable that the average farm price of apples may correspond more nearly with the relative levels that prevailed between the big upsurge in citrus production after 1935, and the entrance of the United States into the war in 1941. The season average price to growers during that period, in the United States and in Washington, was generally below $1 per bushel. If general price levels of the future are above those of the 1936-41 period, the price of apples should be correspondingly higher. But relative to the general price levels, it would appear that the three major winter fruits - apples, oranges, and grapefruit - face a long period of supply-price relationships comparable to those prevailing in the period immediately preceding the war. With these relationships, and with conditions of economic activity represented by moderate employment, the future United States season average farm prices of apples may lie within the range of $.85-1.15.

Variety Prices in Washington State

A detailed analysis of prices by varieties for standard-packed boxed apples in the Wenatchee and Yakima Districts has been made for the crop years 1934-37. 3/ Following are the seasonal weighted-average net prices to growers, delivered to warehouse, for all grades combined of the principal varieties in the two districts:

3/ "Apple Prices Received by Washington and Oregon Growers and Percentage Distribution of Sales by Variety, Grade, and Size, 1934 to 1937," by Kenneth J. McCallister, U.S. Dept. of Agriculture, March 1940. (Processed.)

Crop	All varieties	Red Delicious	Common Delicious	Winesap	Rome Beauty	Jonathan	Golden Delicious
				Dollars per box			
1934	.71	.86	.84	.66	.66	.68	1.21
1935	.72	.92	.79	.69	.57	.64	.96
1936	1.16	1.40	1.34	1.18	.99	.87	1.51
1937	.54	.86	.68	.43	.44	.51	.93

Future returns by varieties may differ from past relationships. Continuing increases in the volume of Delicious such as are indicated by figures 10 and 11 may place that variety at a disadvantage in market returns. The prospective decline in the volume of Winesaps, on the other hand, probably will place it in a more favorable position.

Table 1.- Apples: Total production in 8 major producing states, 1909-45 1/

Year	Wash-ington	Cali-fornia	Michi-gan	Ohio	New York	Pennsyl-vania	Vir-ginia	West Virginia	Total 8 major
				Thousand bushels					
1909	2,672	4,935	12,333	4,664	25,409	11,048	6,107	4,225	71,393
1910	5,800	4,906	4,196	5,900	17,000	11,600	12,100	7,100	68,602
1911	3,500	4,700	12,110	18,700	39,000	19,750	7,200	7,800	112,760
1912	7,700	5,700	16,332	10,600	44,000	11,882	15,000	10,300	121,514
1913	6,900	3,192	8,162	4,800	19,500	9,165	5,200	1,035	57,954
1914	9,790	6,000	15,434	13,300	49,600	19,448	15,300	11,200	140,072
1915	9,782	4,690	8,227	17,952	24,940	12,093	13,176	6,554	97,414
1916	16,560	5,922	10,582	8,601	35,334	13,825	13,299	8,664	112,787
1917	18,360	6,156	4,254	6,160	15,660	8,212	11,778	5,152	75,732
1918	19,592	6,440	11,124	7,560	36,960	11,055	10,068	7,046	109,845
1919	25,295	8,200	5,884	2,976	14,350	5,513	8,943	4,189	75,350
1920	18,300	6,000	15,097	13,213	44,625	15,655	13,744	8,190	134,824
1921	31,500	7,275	5,094	3,040	11,340	1,860	570	460	61,139
1922	27,449	8,200	10,617	6,355	30,030	9,765	8,960	5,400	106,776
1923	33,000	10,500	9,938	10,050	19,769	10,530	10,000	7,560	111,347
1924	22,000	8,903	5,361	6,412	19,056	7,287	14,500	6,896	90,415
1925	28,700	6,016	8,399	6,480	22,940	6,947	7,844	3,782	91,108
1926	34,445	10,350	8,746	12,804	30,600	16,262	21,855	10,614	145,676
1927	24,940	7,458	4,106	5,310	11,315	6,160	6,600	4,464	70,353
1928	37,840	13,100	5,246	6,578	18,228	8,460	16,100	8,060	113,612
1929	30,000	7,880	7,168	2,592	13,992	6,040	13,054	5,176	85,902
1930	38,000	11,644	6,016	4,172	23,560	10,098	7,700	4,200	105,390
1931	31,000	9,112	11,025	15,494	18,718	14,400	21,074	12,000	132,823
1932	32,000	9,045	6,454	5,512	23,485	10,047	7,650	4,208	98,401
1933	29,240	9,333	9,949	4,755	17,072	7,917	10,750	4,200	93,216
1934	33,026	6,500	7,645	4,459	13,556	9,731	10,011	4,185	89,113
1935	32,208	9,889	10,536	8,763	16,338	13,763	16,889	6,189	114,575
1936	27,294	8,922	8,273	3,199	12,225	8,242	9,194	4,396	81,745
1937	30,012	10,292	13,506	10,752	21,142	15,475	19,594	10,366	131,139
1938	29,410	8,161	6,878	3,218	14,823	8,662	10,468	4,304	85,924
1939	25,534	8,871	14,102	10,611	25,544	13,748	13,223	5,985	117,618
1940	26,437	7,173	8,074	5,952	13,686	10,692	13,135	6,055	91,204
1941	27,632	8,562	10,256	8,219	17,343	10,804	14,048	5,874	102,738
1942	28,185	6,643	11,838	8,745	20,210	12,539	16,779	6,419	111,358
1943	23,711	9,666	7,549	3,318	14,470	6,338	6,655	2,803	74,510
1944	32,061	6,827	9,776	7,390	18,096	11,375	17,357	5,967	108,849
1945	26,639	10,267	1,603	1,348	2,298	3,088	3,744	2,226	51,213

1/ For 1939-45 approximate total production computed from the estimates of production in commercial areas.

Source: "Apples: Revised Estimates of Production, 1909-42" Crop Reporting Board, U.S.D.A.; and current publications of the same agency for subsequent years.

Table 2.- Apples: Total production in 8 minor states of the 16 Principal Producing States, 1909-45 1/

Year	Oregon	Idaho	Colorado	Illinois	Indiana	Maryland	New Jersey	Massachusetts	Total 8 minor
				Thousand bushels					
1909	1,931	660	3,559	3,093	2,759	1,823	1,407	2,550	17,782
1910	3,800	1,250	1,671	813	4,140	2,700	1,700	2,900	18,974
1911	1,500	1,200	2,732	11,950	7,220	2,600	2,793	3,000	32,995
1912	4,100	1,700	2,976	5,940	3,363	2,650	1,504	3,300	25,533
1913	3,500	1,659	2,940	8,308	5,074	1,300	1,722	2,300	26,803
1914	3,600	2,253	3,718	3,696	3,182	3,248	2,751	4,400	26,848
1915	3,264	2,480	1,700	13,986	8,346	2,130	1,827	2,655	36,388
1916	4,264	738	1,806	4,662	2,695	2,108	1,674	3,450	21,397
1917	4,200	3,974	2,190	7,163	3,896	2,010	1,458	2,163	27,054
1918	4,095	1,290	2,067	3,360	1,400	1,639	1,626	2,430	17,907
1919	6,924	3,646	3,418	4,673	926	1,519	1,666	3,187	25,959
1920	4,400	2,900	2,830	5,690	4,000	2,534	2,862	3,575	28,791
1921	6,557	4,500	3,088	1,670	850	232	667	1,035	18,599
1922	6,560	3,900	4,080	9,006	3,400	1,860	2,985	3,139	34,930
1923	7,650	5,200	3,150	7,035	3,700	2,205	2,628	3,219	34,787
1924	5,991	2,000	2,830	5,529	1,800	1,734	2,762	3,006	25,652
1925	5,100	5,700	3,150	5,800	2,430	1,870	2,847	2,816	29,713
1926	7,857	4,600	3,444	7,227	3,870	3,484	4,427	4,014	38,923
1927	4,446	6,000	2,560	3,218	1,176	1,380	3,118	2,310	24,208
1928	6,700	5,400	2,730	5,018	2,296	1,820	3,328	2,536	29,828
1929	3,800	5,350	2,251	3,360	1,120	2,087	2,149	2,491	22,608
1930	6,000	5,300	976	3,528	1,419	1,554	4,063	4,598	27,438
1931	4,150	5,000	2,000	8,700	4,224	3,458	3,528	1,806	32,866
1932	4,950	4,200	2,300	2,300	1,196	1,415	3,997	4,050	24,408
1933	3,500	5,200	1,600	2,420	1,248	1,418	3,783	4,274	23,443
1934	4,608	3,340	1,467	2,724	1,712	1,337	2,372	1,865	19,425
1935	4,012	5,940	1,586	5,740	3,201	2,817	4,789	3,185	31,270
1936	4,413	2,900	2,164	1,603	1,014	2,089	3,095	2,303	19,581
1937	4,021	4,618	1,458	6,562	4,053	2,750	4,736	3,366	31,564
1938	4,179	3,580	2,052	2,172	1,609	1,987	3,232	2,600	21,411
1939	3,494	3,391	1,292	5,380	3,373	2,465	3,737	3,634	26,766
1940	4,036	2,661	2,120	3,110	1,944	2,174	2,856	2,792	21,693
1941	2,977	2,654	1,624	4,985	3,640	2,241	2,830	2,827	23,778
1942	3,195	1,853	1,715	4,316	2,210	2,301	3,483	3,864	23,237
1943	3,241	696	1,226	3,532	1,603	1,016	2,181	2,532	16,027
1944	4,135	2,065	2,153	3,061	2,163	2,192	2,247	3,122	21,138
1945	3,342	2,679	1,371	3,397	1,314	811	1,392	466	14,772

1/ For 1939-45 approximate total production computed from the estimates of production in commercial areas.

Source: "Apples: Revised Estimates of Production, 1909-42," Crop Reporting Board, U.S.D.A.; and current publications of the same agency for subsequent years.

Table 3.- Apples: Total production, United States, and various groups of states, 1909-45 1/

Year	16 Prin. Producing States: 8 Major	16 Prin. Producing States: 8 Minor	16 Prin. Producing States: Total	30 Other States	United States	16 Prin. Producing States: 5 Western	16 Prin. Producing States: 11 Eastern 2/
	Thousand bushels						
1909	71,393	17,782	89,175	56,213	145,388	13,757	75,418
1910	68,602	18,974	87,576	52,339	139,915	17,427	70,149
1911	112,760	32,995	145,755	64,692	210,447	13,632	132,123
1912	121,514	25,533	147,047	77,982	225,029	22,176	124,871
1913	57,954	26,803	84,757	50,347	135,104	18,191	66,566
1914	140,072	26,848	166,920	66,431	233,351	25,361	141,559
1915	97,414	36,388	133,802	67,918	201,720	21,916	111,886
1916	112,787	21,397	134,184	47,031	181,215	29,290	104,894
1917	75,732	27,054	102,786	52,579	155,365	34,880	67,906
1918	109,845	17,907	127,752	33,732	161,484	33,484	94,268
1919	75,350	25,959	101,309	39,323	140,632	47,483	53,826
1920	134,824	28,791	163,615	43,073	206,688	34,430	129,185
1921	61,139	18,599	79,738	15,900	95,638	52,920	26,818
1922	106,776	34,930	141,706	47,719	189,425	50,189	91,517
1923	111,347	34,787	146,134	34,781	180,915	59,500	86,634
1924	90,415	25,652	116,067	44,390	160,457	41,724	74,343
1925	91,108	29,713	120,821	31,603	152,424	48,666	72,155
1926	145,676	38,923	184,599	45,057	229,656	60,696	123,903
1927	70,353	24,208	94,561	21,147	115,708	45,404	49,157
1928	113,612	29,828	143,440	34,373	177,813	65,770	77,670
1929	85,902	22,608	108,510	26,592	135,102	49,281	59,229
1930	105,390	27,438	132,828	23,795	156,623	61,920	70,908
1931	132,823	32,866	165,689	39,715	205,404	51,262	114,427
1932	98,401	24,408	122,809	24,000	146,809	52,495	70,314
1933	93,216	23,443	116,659	31,981	148,640	48,873	67,786
1934	89,113	19,425	108,538	19,665	128,203	48,941	59,597
1935	114,575	31,270	145,845	28,562	174,407	53,635	92,210
1936	81,745	19,581	101,326	15,501	116,827	45,693	55,633
1937	131,139	31,564	162,703	38,756	201,459	50,401	112,302
1938	85,924	21,411	107,335	18,105	125,440	47,382	59,953
1939	117,618	26,766	144,384	27,559	171,943	42,582	101,802
1940	91,204	21,693	112,897	24,682	137,579	42,427	70,470
1941	102,738	23,778	126,516	24,824	151,340	43,449	83,067
1942	111,358	23,237	134,595	24,294	158,889	41,591	93,004
1943	74,510	16,027	90,537	19,401	109,938	38,540	51,997
1944	108,849	21,138	129,987	24,030	154,017	47,241	82,746
1945	51,213	14,772	65,985	13,521	79,506	44,298	21,687

1/ For 1939-45 approximate total production computed from the estimates of production in commercial areas.

2/ Western: Wash., Calif., Ore., Ida., Colo.
Eastern: Mich., Ohio, N.Y., Pa., Va., W.Va., Ill., Ind., Md., N.J., Mass.

Source: "Apples: Revised Estimates of Production, 1909-42", Crop Reporting Board, U.S.D.A.; and current publications of the same agency for subsequent years.

Table 4.- Apples: Commercial production by varieties and areas, 1943-45
(For varieties of importance in the Pacific Northwest)

Area	1943	1944	1945 1/	1943	1944	1945 1/
	Thousand bushels					
	Delicious			Winesap		
North Atlantic States 2/	1,451	2,059	542	92	154	89
South Atlantic States 3/	484	2,922	475	971	2,902	408
Central States 4/	1,111	1,818	630	420	389	280
Western States 5/	11,800	15,706	14,275	8,993	11,900	9,684
Total 35 States	14,846	22,505	15,922	10,476	15,345	10,461
	Golden Delicious			Stayman		
North Atlantic States	300	315	202	1,438	3,332	613
South Atlantic States	298	632	177	1,431	3,708	612
Central States	1,012	988	876	550	1,110	313
Western States	352	547	401	374	484	339
Total 35 States	1,962	2,482	1,656	3,793	8,634	1,877
	Rome Beauty			Jonathan		
North Atlantic States	1,399	1,868	601	244	588	157
South Atlantic States	263	510	151	267	781	168
Central States	598	1,059	355	2,814	3,527	2,050
Western States	2,676	3,423	3,163	2,738	4,441	3,032
Total 35 States	4,936	6,860	4,270	6,063	9,337	5,407
	Yellow Newtown			Ben Davis and Gano		
North Atlantic States	-	-	-	933	1,336	178
South Atlantic States	168	729	147	574	1,203	408
Central States	-	-	-	372	476	198
Western States	4,480	3,599	4,425	420	500	471
Total 35 States	4,648	4,328	4,572	2,299	3,515	1,255
	McIntosh			ALL VARIETIES		
North Atlantic States	7,675	9,441	2,152	26,238	34,941	10,294
South Atlantic States	-	-	-	9,498	23,451	6,210
Central States	1,148	1,679	516	15,489	19,995	10,159
Western States	306	472	355	37,825	46,367	42,219
Total 35 States	9,129	11,592	3,023	89,050	124,754	68,882

1/ Preliminary.
2/ Maine, N.H., Vt., Mass., R.I., Conn., N.Y., N.J., and Pa.
3/ Del., Md., Va., W.Va., and N.C.
4/ Ohio, Ind., Ill., Mich., Wis., Minn., Iowa, Mo., Nebr., Kans., Ky., Tenn., and Ark.
5/ Idaho, Colo., N.Mex., Utah, Wash., Oreg., and Calif.

Source: "Apple Production, by Varieties, by Areas, 1945 with Comparisons", U.S. Department of Agriculture, August 1945.

Table 5.- Apples: Number of bearing trees enumerated by the census, United States and various groups of states, 1910-40.

States	1910	1920	1925	1930	1935	1940
	Thousands (Bearing Trees)					
United States	151,322	115,309	103,697	88,848	82,535	58,152
Washington	3,009	7,964	6,782	5,193	4,598	3,404
California	2,483	3,128	3,540	2,870	2,516	1,969
Michigan	7,534	5,616	5,545	5,200	5,713	4,317
Ohio	8,505	5,970	5,354	4,660	5,263	3,494
New York	11,248	9,637	9,469	8,284	7,684	5,377
Pennsylvania	8,000	6,988	6,726	6,244	5,860	4,393
Virginia	7,004	7,385	8,010	7,840	6,724	5,060
West Virginia	4,571	5,555	5,480	5,247	4,229	3,241
8 Major States	52,354	52,243	50,906	45,538	42,587	31,255
Oregon	2,030	3,315	2,773	1,641	1,379	932
Idaho	1,006	2,380	1,761	1,250	996	433
Colorado	1,688	1,778	1,390	993	814	532
Illinois	9,900	5,113	4,129	3,718	3,949	2,398
Indiana	5,765	3,428	2,783	2,139	2,206	1,210
Maryland	1,288	1,652	1,696	1,585	1,209	766
New Jersey	1,054	1,149	1,422	1,531	1,496	1,105
Massachusetts	1,367	1,219	1,402	1,302	1,617	1,153
8 Minor States	24,098	20,034	17,356	14,159	13,666	8,529
16 Principal Producing States	76,452	72,277	68,262	59,697	56,253	39,784
Other 30 States	74,870	43,032	35,435	29,151	26,282	18,368
5 Principal Western States	10,216	18,565	16,246	11,947	10,303	7,270
11 Principal Eastern States	66,236	53,712	52,016	47,750	45,950	32,514

Table 6.- Apples: Number of non-bearing trees, and total number of trees, enumerated by the census, United States and various groups of states, 1930-40.

State	Non-Bearing Trees				Total Trees (Bearing and Non-Bearing)		
	1930	1935	1940		1930	1935	1940
	Trees	Trees	Trees	Percent of Total trees	Trees	Trees	Trees
	Thousand			Percent	Thousand		
Washington	948	858	272	7	6,141	5,456	3,676
California	474	245	173	8	3,344	2,761	2,142
Oregon	219	186	117	11	1,860	1,565	1,049
Idaho	110	97	31	7	1,360	1,093	464
Colorado	97	56	56	10	1,090	870	588
5 Western States	1,848	1,442	649		13,795	11,745	7,919
% of Total	13	12		8			
Michigan	1,394	1,028	1,040	19	6,594	6,741	5,357
Ohio	1,939	1,432	856	20	6,599	6,695	4,350
New York	2,017	1,415	1,204	18	10,301	9,099	6,581
Pennsylvania	1,616	1,153	830	16	7,860	7,013	5,223
Virginia	1,426	962	803	14	9,266	7,686	5,863
West Virginia	947	634	587	15	6,194	4,863	3,828
Indiana	786	548	344	22	2,925	2,754	1,554
New Jersey	565	310	174	14	2,096	1,806	1,279
Massachusetts	697	426	255	18	1,999	2,043	1,408
Illinois	1,755	906	444	16	5,473	4,855	2,842
Maryland	274	123	106	12	1,859	1,332	872
11 Eastern States	13,416	8,937	6,643		61,166	54,887	39,157
% of Total	22	16		17			
16 Principal States	15,264	10,379	7,292	15	74,961	66,632	47,076
30 Other States	12,191	7,139	6,218	25	41,342	33,421	24,586
United States	27,455	17,518	13,510	19	116,303	100,053	71,662

Table 7.- Apples: Carlot shipments and unloads of Washington apples during calendar years 1923-44.

20-City Unloads, 1924-44; 61-City Unloads, 1927-39, and Estimated 61-City Unloads, 1923-26 and 1940-44. See list of cities below.

Year	Washington carlot shipments	Unloads			
		20 Cities	Percent of shipments	61 Cities	Percent of shipments
	Cars	Cars	Percent	Cars	Percent
1923	36,752	16,697	45	20,214*	55*
1924	31,357	13,738	44	16,933*	54*
1925	30,676	12,496	41	15,645*	51*
1926	35,849	16,008	45	19,717*	55*
1927	28,970	11,556	40	14,812	51
1928	38,295	15,927	42	19,851	52
1929	34,252	12,676	37	16,133	47
1930	42,117	16,139	38	20,374	48
1931	34,473	14,745	43	19,494	57
1932	33,060	13,356	40	16,629	50
1933	27,551	12,378	45	15,377	56
1934	31,075	12,297	40	15,548	50
1935	27,409	11,615	42	15,139	55
1936	30,631	11,660	38	15,501	51
1937	25,295	10,573	42	13,865	55
1938	27,930	10,148	36	13,902	50
1939	24,974	10,440	42	14,462	58
1940	22,994	10,503	46	13,796*	60*
1941	24,903	10,970	44	14,444*	58*
1942	24,979	11,867	48	15,237*	61*
1943	23,821	10,001	42	13,340*	56*
1944	28,528	10,884	38	14,845*	52*

61 UNLOAD CITIES GROUPED BY REGIONS

NORTHEAST 18 Cities	SOUTH 18 Cities	NORTH CENTRAL 23 Cities
#Baltimore, Md.	#Atlanta, Ga.	#Chicago, Ill.
#Boston, Mass.	#Dallas, Texas	#Cincinnati, Ohio
#New York, N.Y.	#Ft. Worth, Texas	#Cleveland, Ohio
#Philadelphia, Pa.	#New Orleans, La.	#Detroit, Mich.
#Pittsburgh, Pa.	Birmingham, Ala.	#Kansas City, Mo.
#Washington, D.C.	El Paso, Texas	#Minneapolis, Minn.
Albany, N.Y.	Houston, Texas	#St. Louis, Mo.
Bridgeport, Conn.	Jacksonville, Fla.	#St. Paul, Minn.
Buffalo, N.Y.	Lexington, Ky.	Columbus, Ohio
Hartford, Conn.	Louisville, Ky.	Dayton, Ohio
Newark, N.J.	Memphis, Tenn.	Des Moines, Ia.
New Haven, Conn.	Nashville, Tenn.	Duluth, Minn.
Portland, Me.	Norfolk, Va.	Evansville, Ind.
Providence, R.I.	Oklahoma City, Okla.	Grand Rapids, Mich.
Rochester, N.Y.	Richmond, Va.	Indianapolis, Ind.
Springfield, Mass.	San Antonio, Texas	Milwaukee, Wisc.
Syracuse, N.Y.	Shreveport, La.	Omaha, Nebr.
Worcester, Mass.	Tampa, Fla.	Peoria, Ill.

(Continued)

Table 7.- (Continued)

CALIFORNIA

#Los Angeles, Calif.
#San Francisco, Calif.

NORTH CENTRAL (Cont'd.)
23 Cities

Sioux City, Ia.
Terre Haute, Ind.
Toledo, Ohio
Youngstown, Ohio

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* Estimated from the annual percentage of shipments unloaded in the 20 cities.
# 20 cities for which carlot unload reports are available during entire period 1923-44 inclusive; by regions, Northeast 6, South 4, North Central 8, and California 2.

Source: Fruit and Vegetable Unload Reports, U.S. Department of Agriculture.

Table 8.- Apples: Carlot unloads of Washington apples in 61 Cities and in 20 cities, 1923-44, grouped by regions.

Year	NORTHEAST				SOUTH			
	18 Cities		6 Cities		18 Cities		4 Cities	
	Cars	% of 61	Cars	% of 20	Cars	% of 61	Cars	% of 20
1923	7,681*	38*	7,555	45	2,830*	14*	1,041	6
1924	7,959*	47*	7,268	53	2,201*	13*	846	6
1925	6,101*	39*	5,578	45	2,033*	13*	764	6
1926	8,084*	41*	7,533	47	2,760*	14*	993	6
1927	6,135	41	5,775	50	2,222	15	763	7
1928	8,156	41	7,561	48	2,651	13	969	6
1929	6,866	43	6,298	50	2,441	15	852	7
1930	7,826	38	7,270	45	2,843	14	1,057	7
1931	8,658	44	8,051	55	2,511	13	959	7
1932	6,425	39	6,020	45	2,329	14	848	6
1933	5,257	34	5,060	41	2,430	16	864	7
1934	4,823	31	4,632	38	2,838	18	1,021	8
1935	4,710	31	4,402	38	3,061	20	1,046	9
1936	3,876	25	3,681	32	3,491	23	1,213	10
1937	4,112	30	3,798	36	2,831	20	953	9
1938	3,374	24	3,240	32	3,531	25	1,113	11
1939	3,848	27	3,639	35	3,574	25	1,047	10
1940	3,311*	24*	3,248	31	3,587*	26*	1,201	11
1941	3,322*	23*	3,282	30	3,466*	24*	1,179	11
1942	3,352*	22*	3,321	28	3,656*	24*	1,324	11
1943	2,534*	19*	2,437	24	3,468*	26*	1,217	12
1944	2,820*	19*	2,679	25	3,711*	25*	1,236	11

Year	NORTH CENTRAL				CALIFORNIA		
	23 Cities		8 Cities		2 Cities 1/		
	Cars	% of 61	Cars	% of 20	Carlots 1/	% of 61	% of 20
1923	9,298*	46*	7,796	47	305	2*	2
1924	6,096*	36*	4,884	36	740	4*	5
1925	6,727*	43*	5,353	43	801	5*	6
1926	7,887*	40*	6,456	40	1,026	5*	6
1927	5,891	40	4,554	39	564	4	5
1928	8,212	41	6,565	41	832	4	5
1929	6,194	38	4,894	39	632	4	5
1930	8,682	43	6,789	42	1,023	5	6
1931	7,168	38	5,478	37	1,157	6	8
1932	6,219	37	4,832	36	1,656	10	12
1933	5,927	39	4,691	38	1,763	11	14
1934	6,724	43	5,481	45	1,163	7	10
1935	6,015	40	4,814	41	1,353	9	12
1936	6,511	42	5,143	44	1,623	10	14
1937	5,431	39	4,331	41	1,491	11	14

(Continued)

Table 8.- (Continued) Apples: Carlot unloads of Washington apples in 61 cities and in 20 cities, 1923-44, grouped by regions.

Year	NORTH CENTRAL (Cont'd.)				CALIFORNIA (Cont'd.)		
	23 Cities		8 Cities		2 Cities 1/		
	Cars	% of 61	Cars	% of 20	Carlots 1/	% of 61	% of 20
1938	5,482	39	4,280	42	1,515	11	15
1939	5,672	39	4,386	42	1,368	9	13
1940	4,967*	36*	4,175	40	1,879	14*	18
1941	5,344*	37*	4,374	40	2,135	15*	20
1942	5,485*	36*	4,596	39	2,626	17*	22
1943	5,202*	39*	4,327	43	2,020	15*	20
1944	5,641*	38*	4,532	42	2,437	16*	22

* Estimated in proportion to the regional percentages of the 20-city unloads.
1/ Including receipts by motortruck, in carlot equivalents.

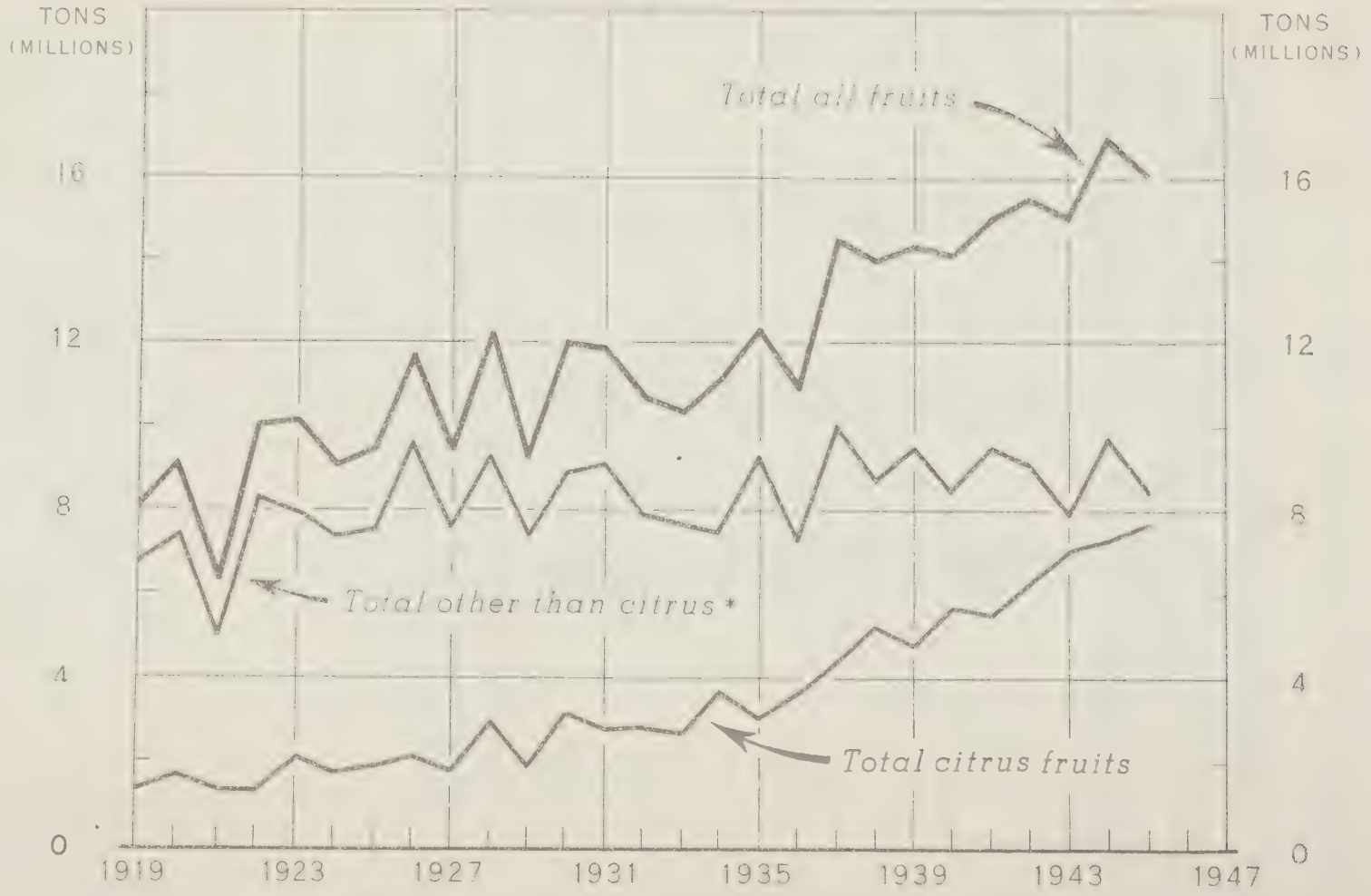
Source: Fruit and Vegetable Unload Reports, U. S. Department of Agriculture.

Table 9.- Apples: Season average price per bushel received by growers, all varieties, Washington and United States, 1909-44.

Year	Washington	United States	Year	Washington	United States
	Dollars per Bushel			Dollars per Bushel	
1909	1.61	.78	1927	1.75	1.48
1910	1.08	.80	1928	1.14	1.09
1911	1.12	.68	1929	1.44	1.39
1912	.58	.62	1930	1.04	1.03
1913	1.27	.89	1931	.65	.64
1914	.58	.57	1932	.55	.61
1915	.93	.68	1933	.83	.79
1916	1.01	.82	1934	.71	.88
1917	1.22	1.11	1935	.70	.72
1918	1.68	1.28	1936	1.09	1.04
1919	2.01	1.78	1937	.62	.64
1920	1.74	1.24	1938	.84	.82
1921	1.47	1.64	1939	.69	.64
1922	1.05	.99	1940	.78	.80
1923	1.04	1.10	1941	1.14	.96
1924	1.73	1.23	1942	1.91	1.37
1925	1.35	1.26	1943	2.52	2.39
1926	1.01	.88	1944	2.45	2.27

Source: "Price Received by Growers for Fruit and Nut Crops, by Type of Sale and Utilization Groups" U. S. Department of Agriculture, January, 1945.

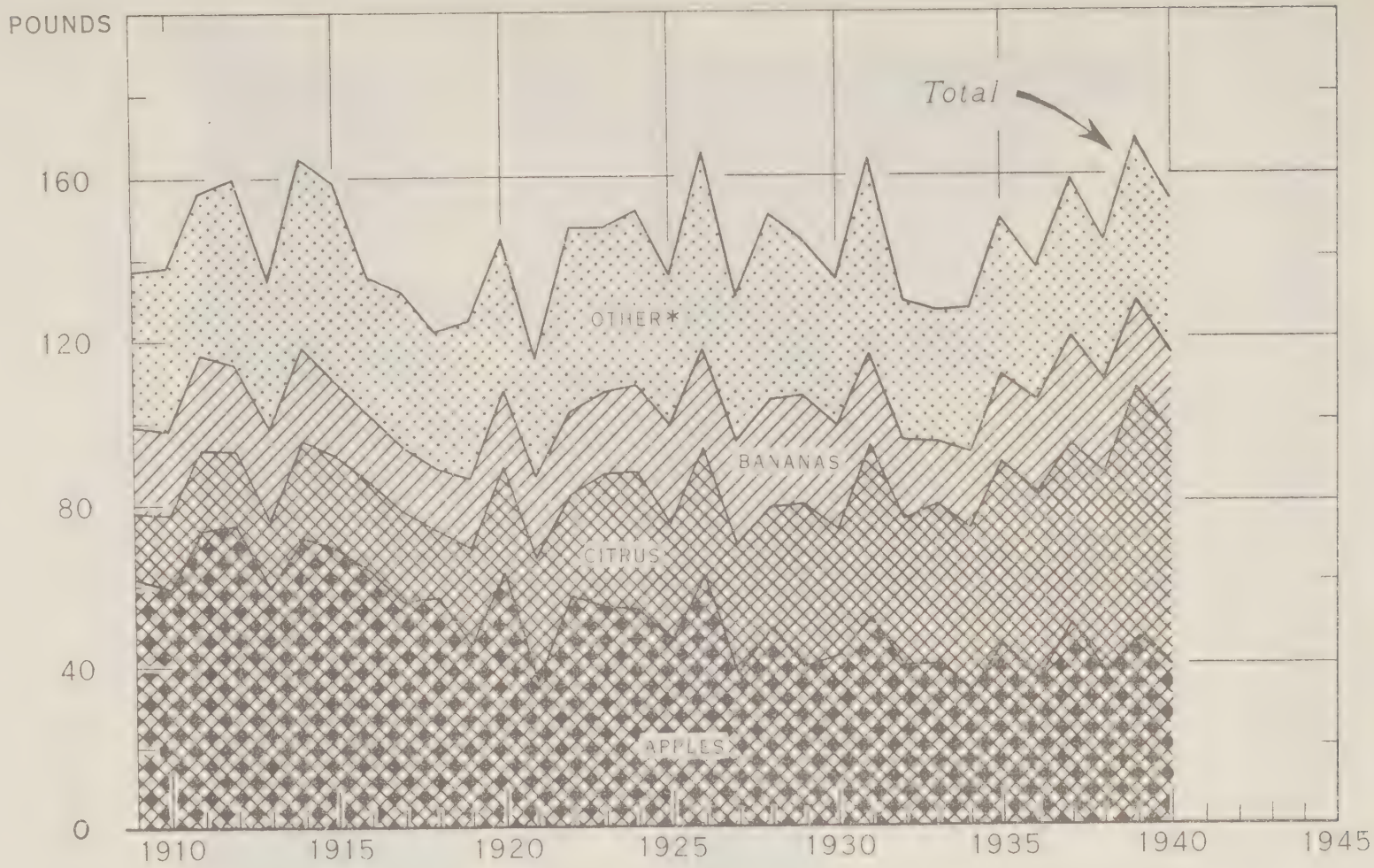
FRUIT PRODUCTION: UNITED STATES, 1919-45



*INCLUDES APPLES, PEACHES, PEARS, GRAPES, CHERRIES, PLUMS, PRUNES, APRICOTS, FIGS, OLIVES, [illegible] CRANBERRIES, DATES, PERSIMMONS AND POMEGRANATES

U.S. DEPARTMENT OF AGRICULTURE Fig. 1 NEG 43497 BUREAU OF AGRICULTURAL ECONOMICS

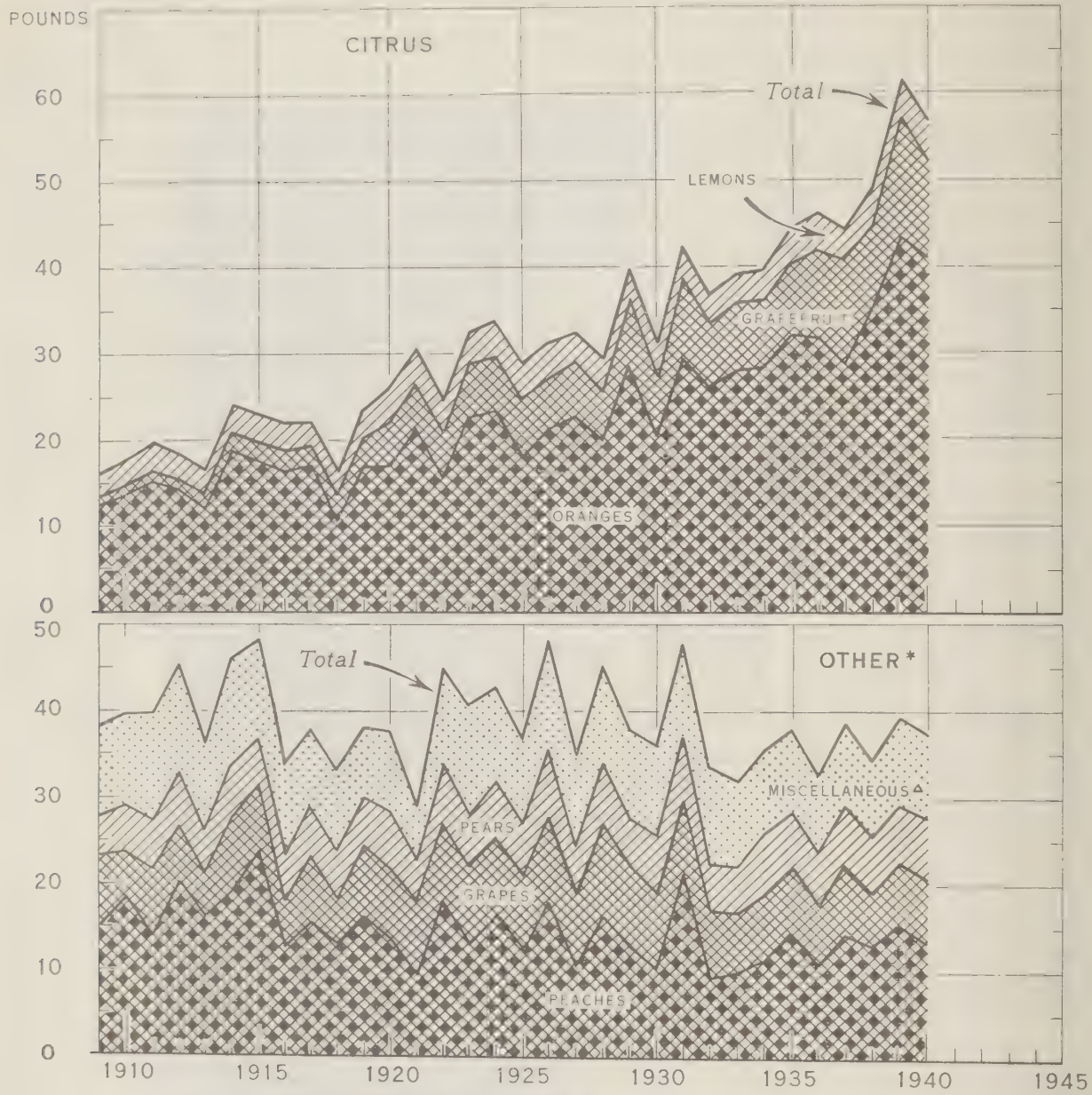
PER CAPITA CONSUMPTION OF FRESH FRUITS, UNITED STATES, 1909-40



*INCLUDES APRICOTS, AVOCADOS, CHERRIES, CRANBERRIES, FIGS, GRAPES, PEACHES, PEARS, PINEAPPLES, PLUMS AND PRUNES, AND STRAWBERRIES

U. S. DEPARTMENT OF AGRICULTURE Fig. 2 NEG. 43195 BUREAU OF AGRICULTURAL ECONOMICS

PER CAPITA CONSUMPTION OF CITRUS AND OTHER FRESH FRUITS, UNITED STATES, 1909-40



* EXCLUDES APPLES AND BANANAS

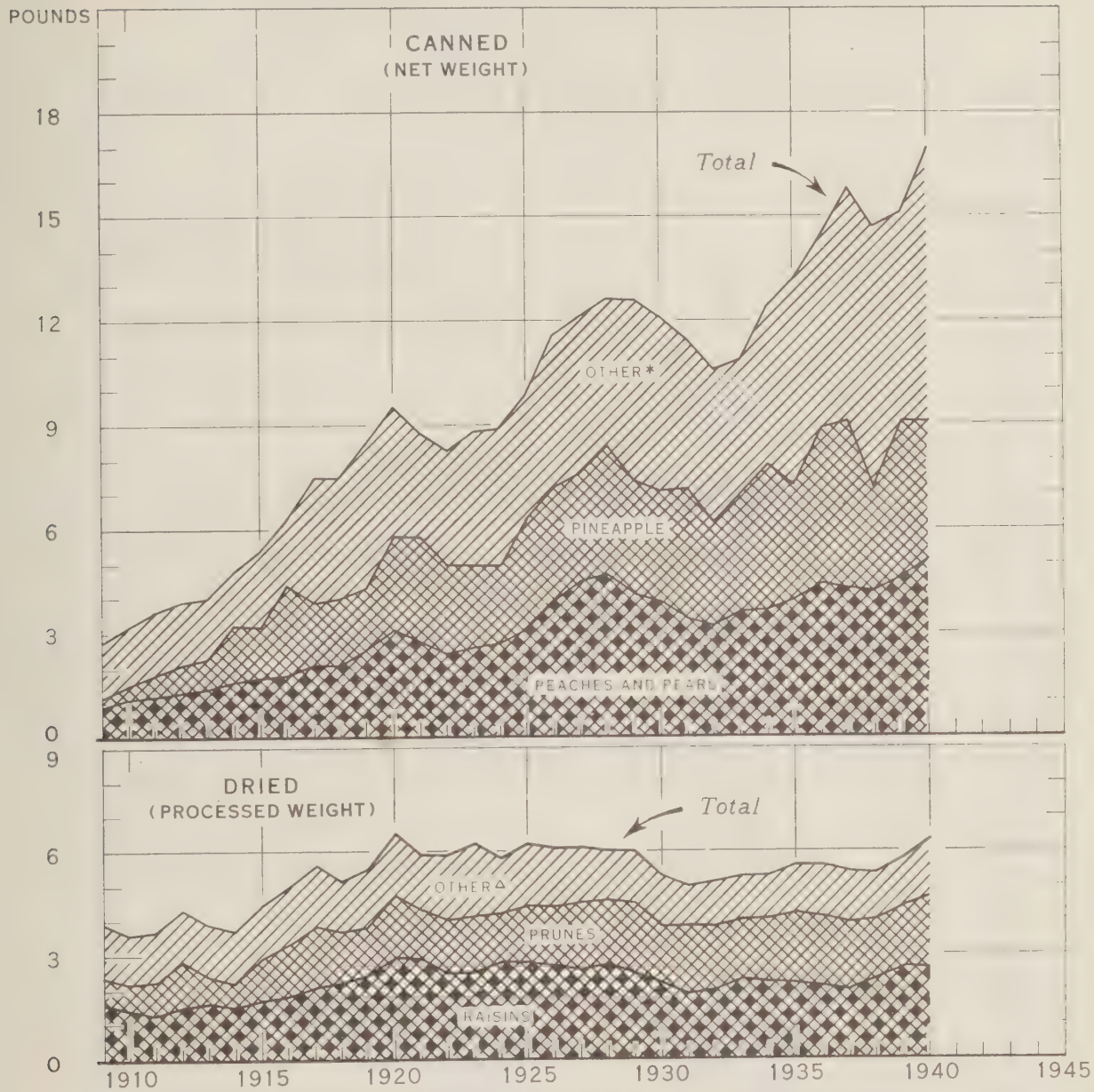
△ INCLUDES APRICOTS, AVOCADOS, CHERRIES, CRANBERRIES, FIGS, PINEAPPLES, PLUMS AND PRUNES, AND STRAWBERRIES

U. S. DEPARTMENT OF AGRICULTURE

Fig. 3

NEG. 43196 BUREAU OF AGRICULTURAL ECONOMICS

PER CAPITA CONSUMPTION OF CANNED AND DRIED FRUITS, UNITED STATES, 1909-40



* INCLUDES APPLES AND APPLE SAUCE, APRICOTS, BERRIES, CHERRIES (ALSO BRINED CHERRIES), CRANBERRIES, FIGS, FRUITS FOR SALAD AND COCKTAIL, GRAPEFRUIT SEGMENTS, OLIVES, AND PLUMS AND PRUNES

△ INCLUDES APPLES, APRICOTS, DATES, FIGS, PEACHES, AND PEARS

U. S. DEPARTMENT OF AGRICULTURE Fig. 4 NEG. 43197 BUREAU OF AGRICULTURAL ECONOMICS

APPLES

TOTAL ANNUAL PRODUCTION, UNITED STATES AND 8 MAJOR PRODUCING STATES, 1909-45, WITH SIX-YEAR MOVING AVERAGES

FROM TABLES 1 AND 3

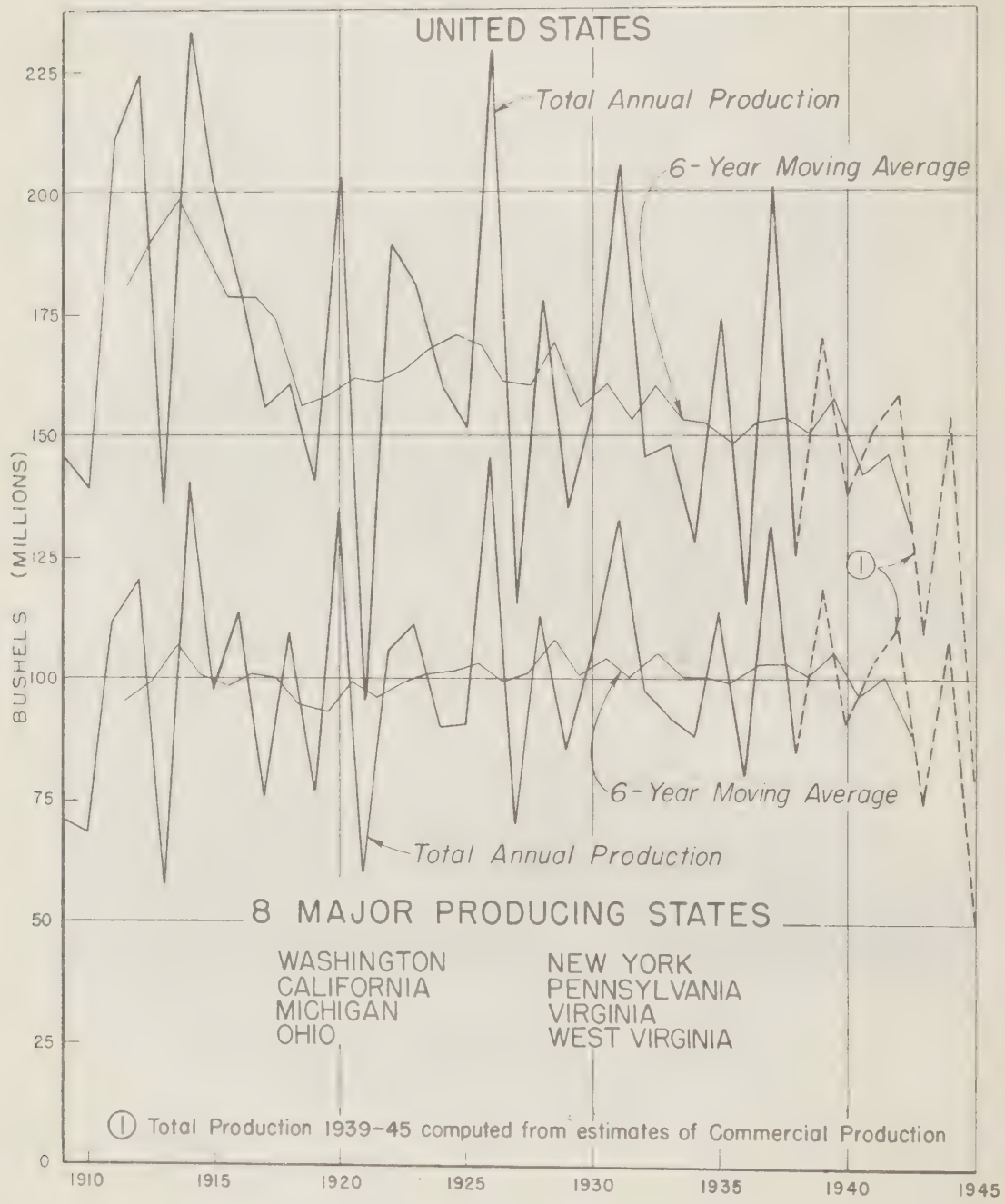


FIG. 5

APPLES

SIX-YEAR MOVING AVERAGE OF TOTAL PRODUCTION, 1909-45, AND NUMBER OF BEARING TREES, 1910-40

UNITED STATES, 16 PRINCIPAL STATES, AND 8 MAJOR PRODUCING STATES

FROM TABLES 1, 2, 3, AND 5

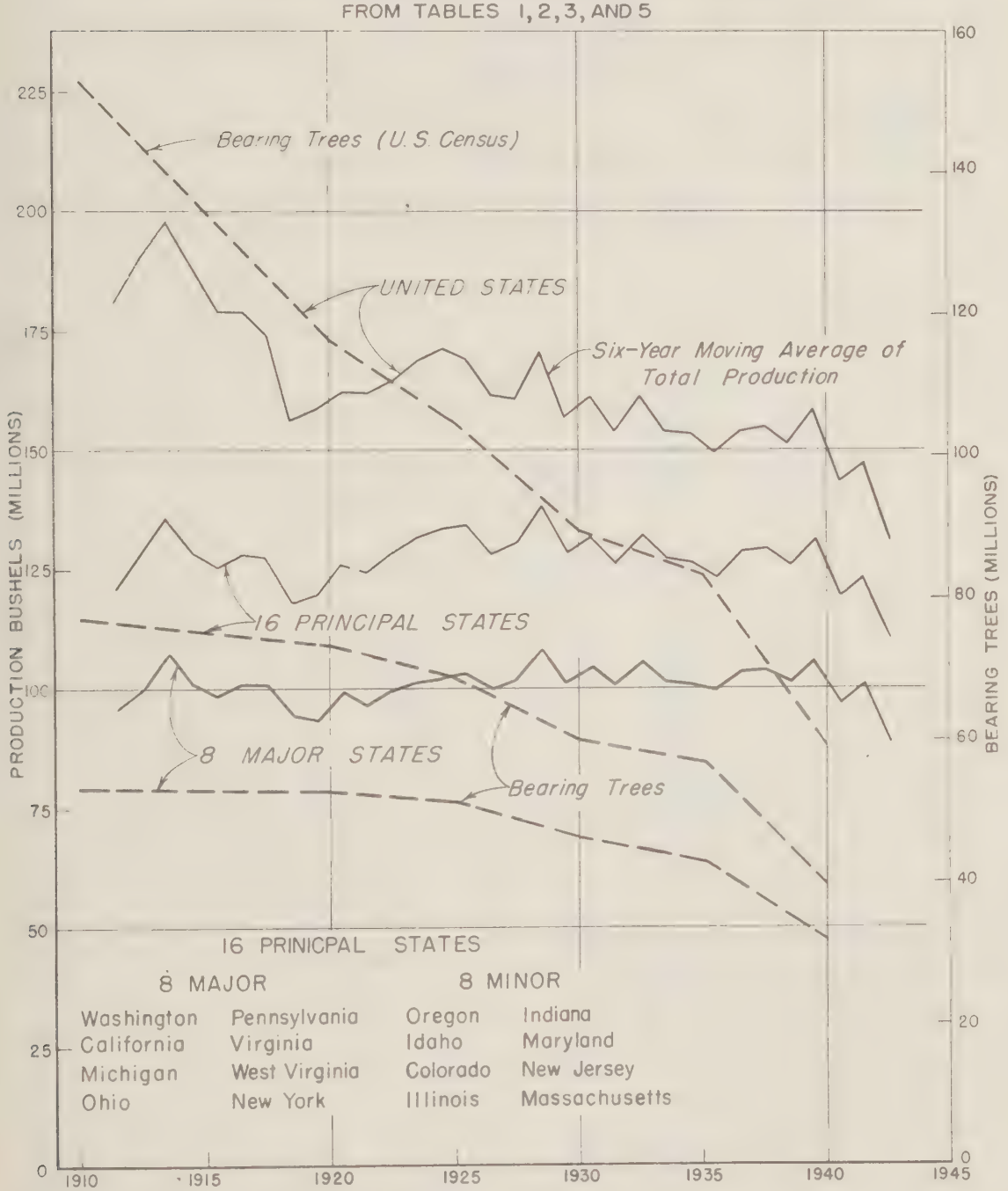


FIG. 6

APPLES

TOTAL ANNUAL PRODUCTION, 1909–45, WITH SIX–YEAR MOVING AVERAGES, AND NUMBERS OF BEARING TREES, 1910–40

5 PRINCIPAL WESTERN STATES AND 11 PRINCIPAL EASTERN STATES

FROM TABLES 3 AND 5

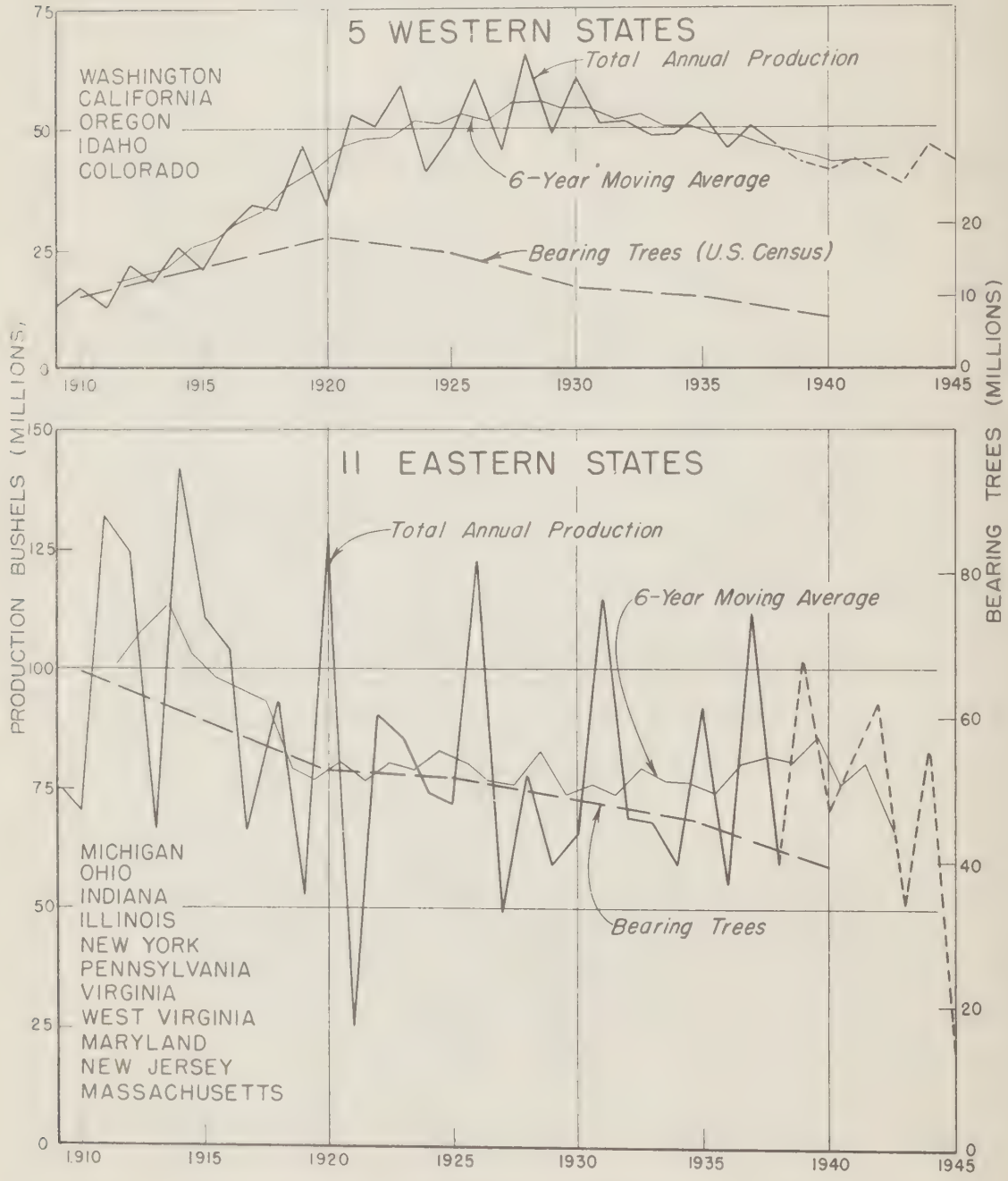


FIG 7

APPLES

TOTAL ANNUAL PRODUCTION, 1909–45, WITH SIX–YEAR MOVING AVERAGES, AND NUMBERS OF BEARING TREES, 1910–40

WASHINGTON AND NEW YORK

FROM TABLES 1 AND 5

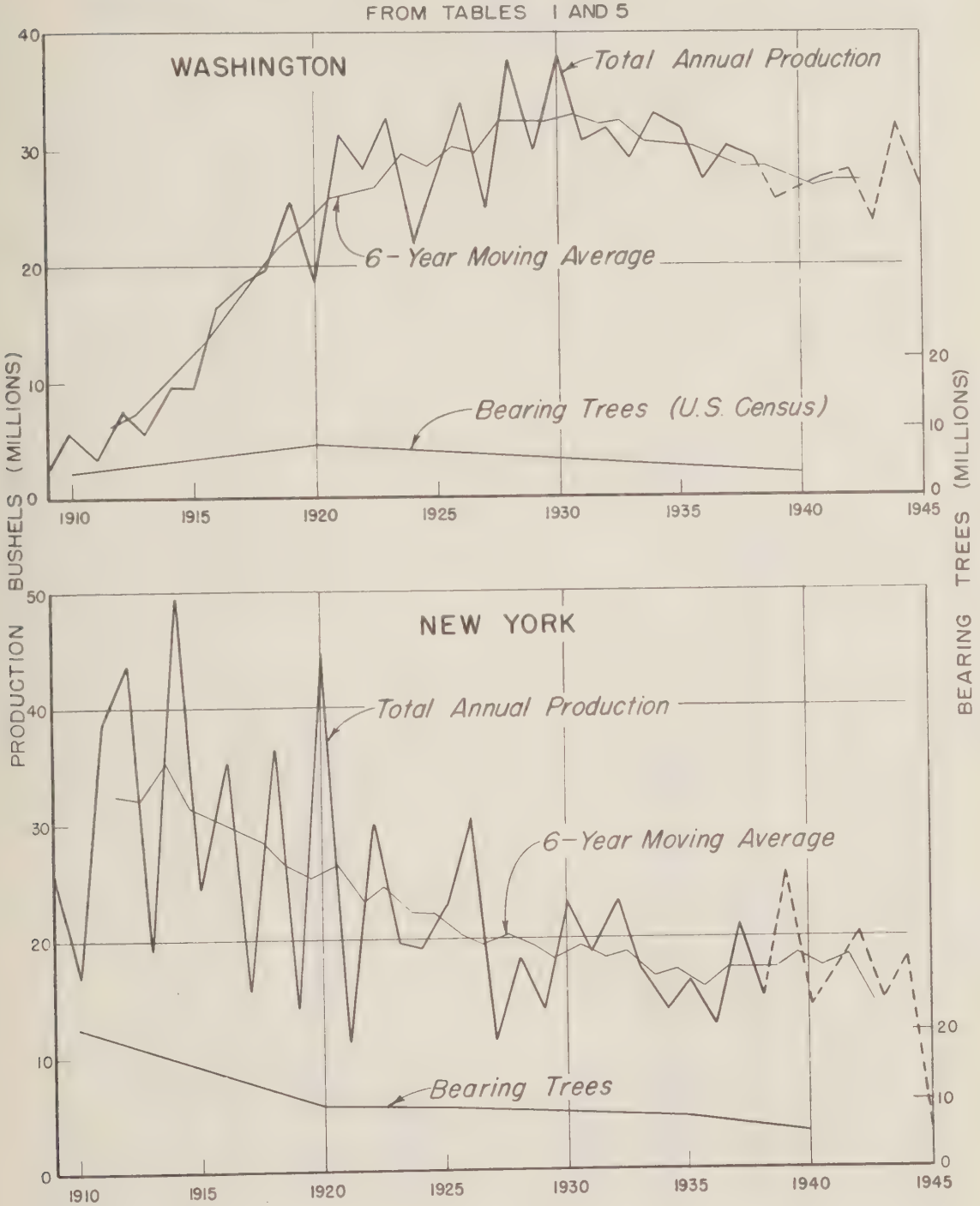


FIG. 8

APPLES

TOTAL ANNUAL PRODUCTION, 1909-45, WITH SIX-YEAR MOVING AVERAGES, AND NUMBERS OF BEARING TREES, 1910-40

WEST VIRGINIA, PENNSYLVANIA, VIRGINIA AND MICHIGAN

FROM TABLES 1 AND 5

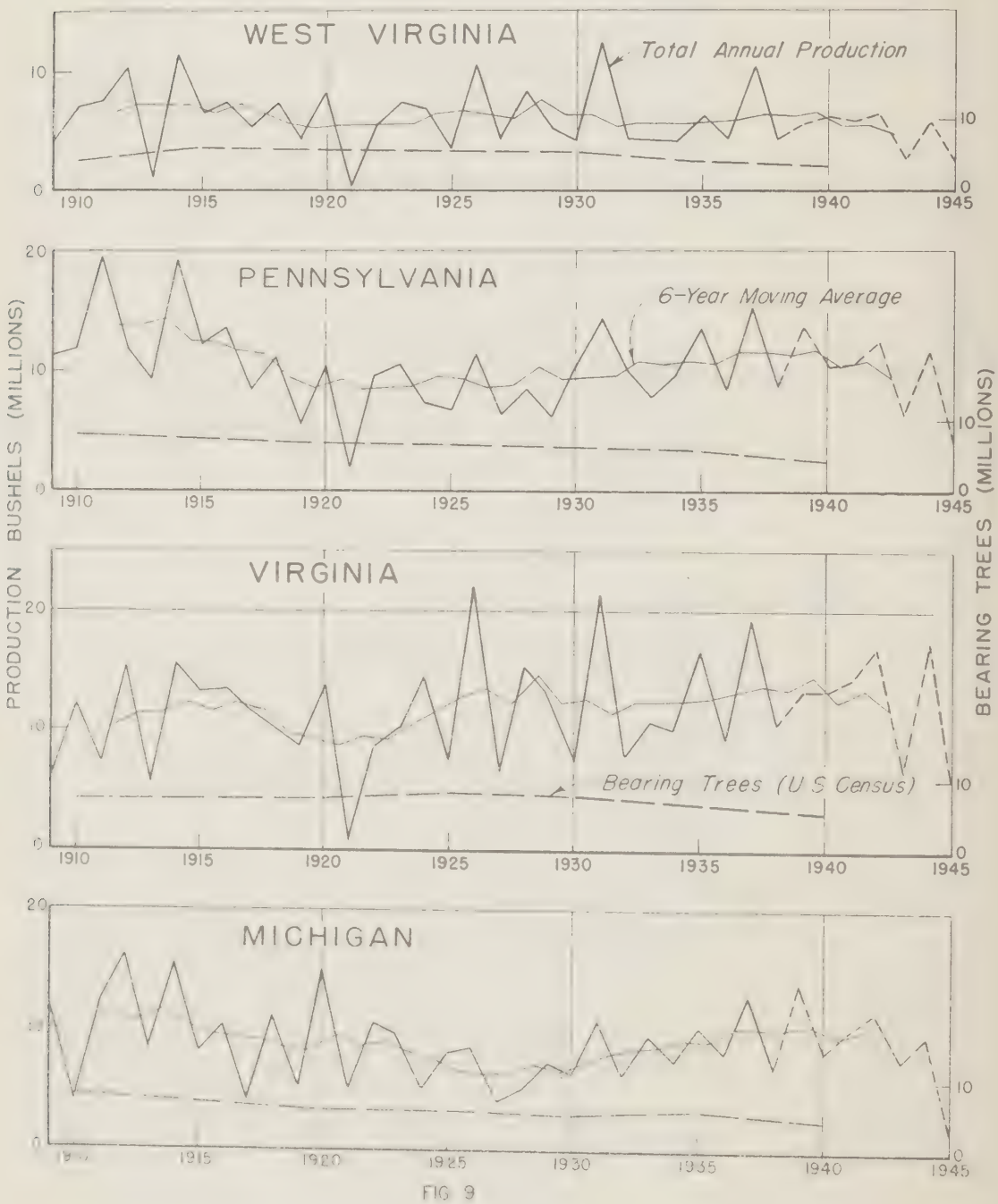


FIG 9

APPLES

APPROXIMATIONS OF THE NUMBERS OF DELICIOUS AND WINESAP TREES IN THE WENATCHEE-OKANOGAN AND YAKIMA DISTRICTS IN 1946, BY 10-YEAR AGE-GROUPS

Computed from the 1936 PACIFIC NORTHWEST FRUIT TREE AND BERRY ACREAGE SURVEY for the Yakima District, and the 1941 SPECIAL TREE FRUIT SURVEY, NORTH CENTRAL WASHINGTON ORCHARD AREAS, for the Wenatchee-Okanogan District. Because of incompleteness of some of the data, and the long periods since the surveys were made, these approximations are subject to considerable error.

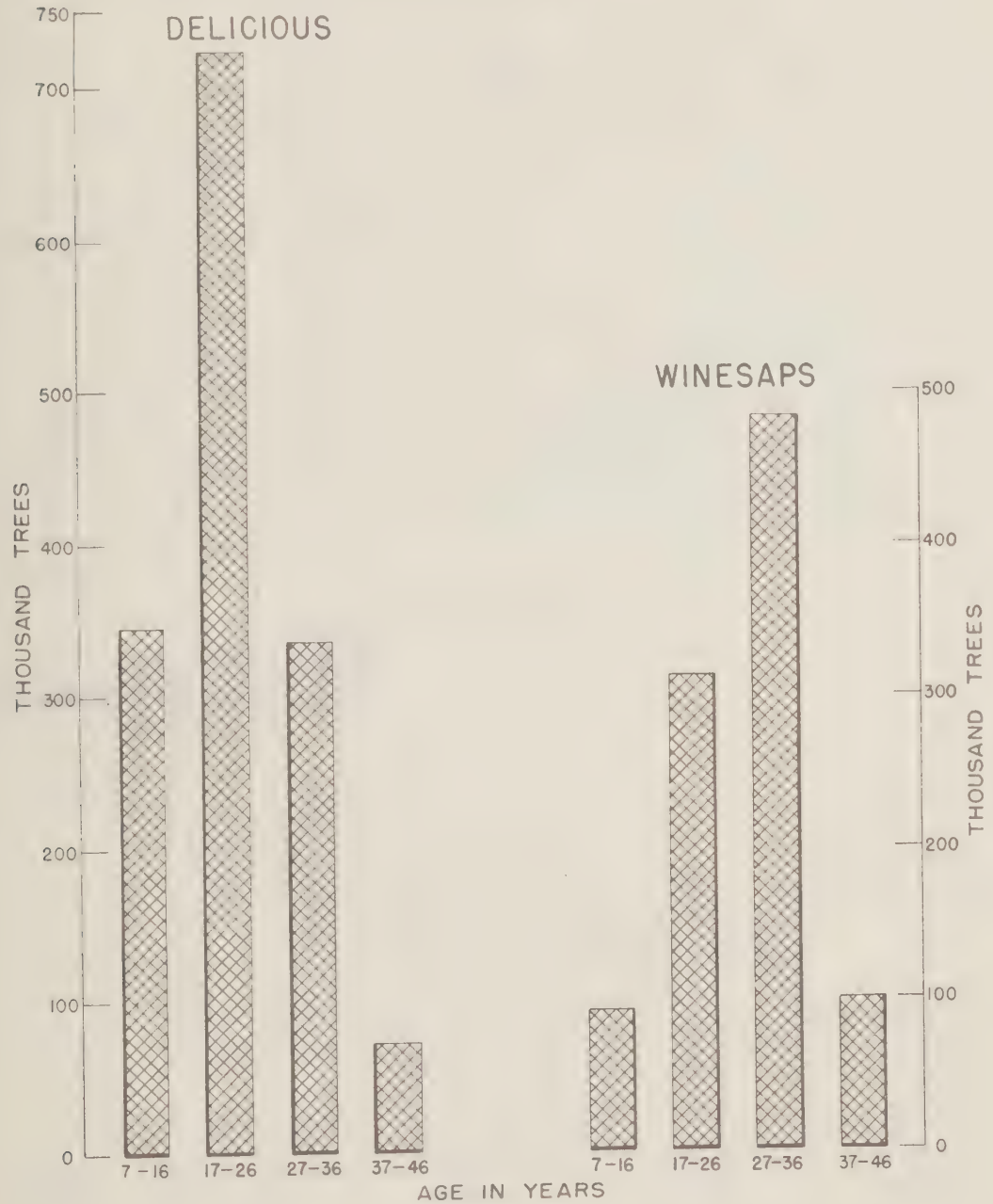


FIG. 10

APPLES

COMBINED SEASONAL SHIPMENTS OF WINESAP AND DELICIOUS VARIETIES FROM WENATCHEE-OKANOGAN, YAKIMA, HOOD RIVER, AND IDAHO, SEASONS 1924-25 TO 1944-45

From the Records of Shipments by Varieties Compiled by the Traffic Associations of Wenatchee Valley, Yakima Valley, and Hood River, and by the Idaho Inspection Service.

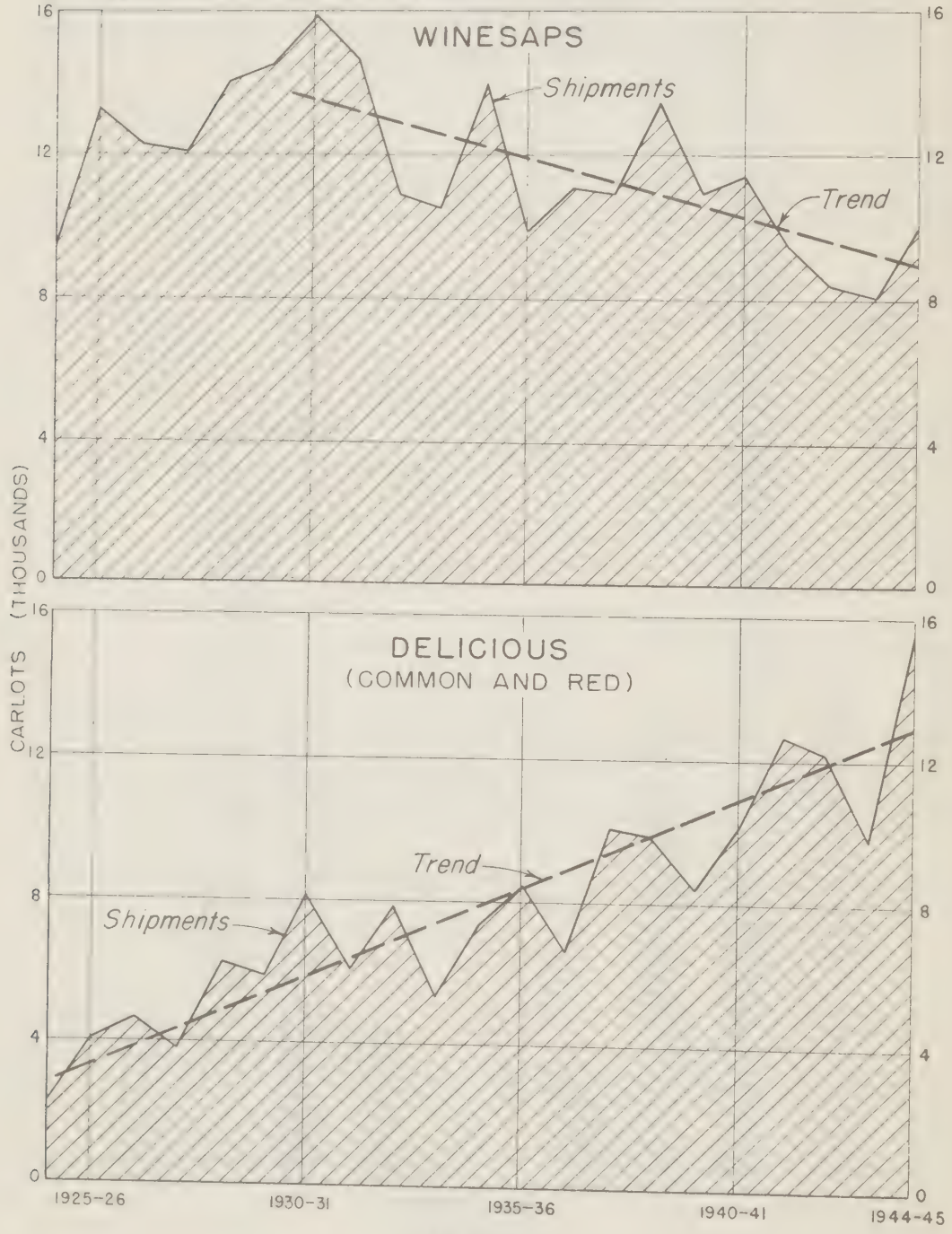


FIG. 11

APPLES

UNLOADS OF WASHINGTON APPLES IN 61 CITIES, 1923-44 BY REGIONS

18 Southern Cities
2 California Cities
18 Northeastern Cities
23 North Central Cities

FROM TABLES 7 and 8

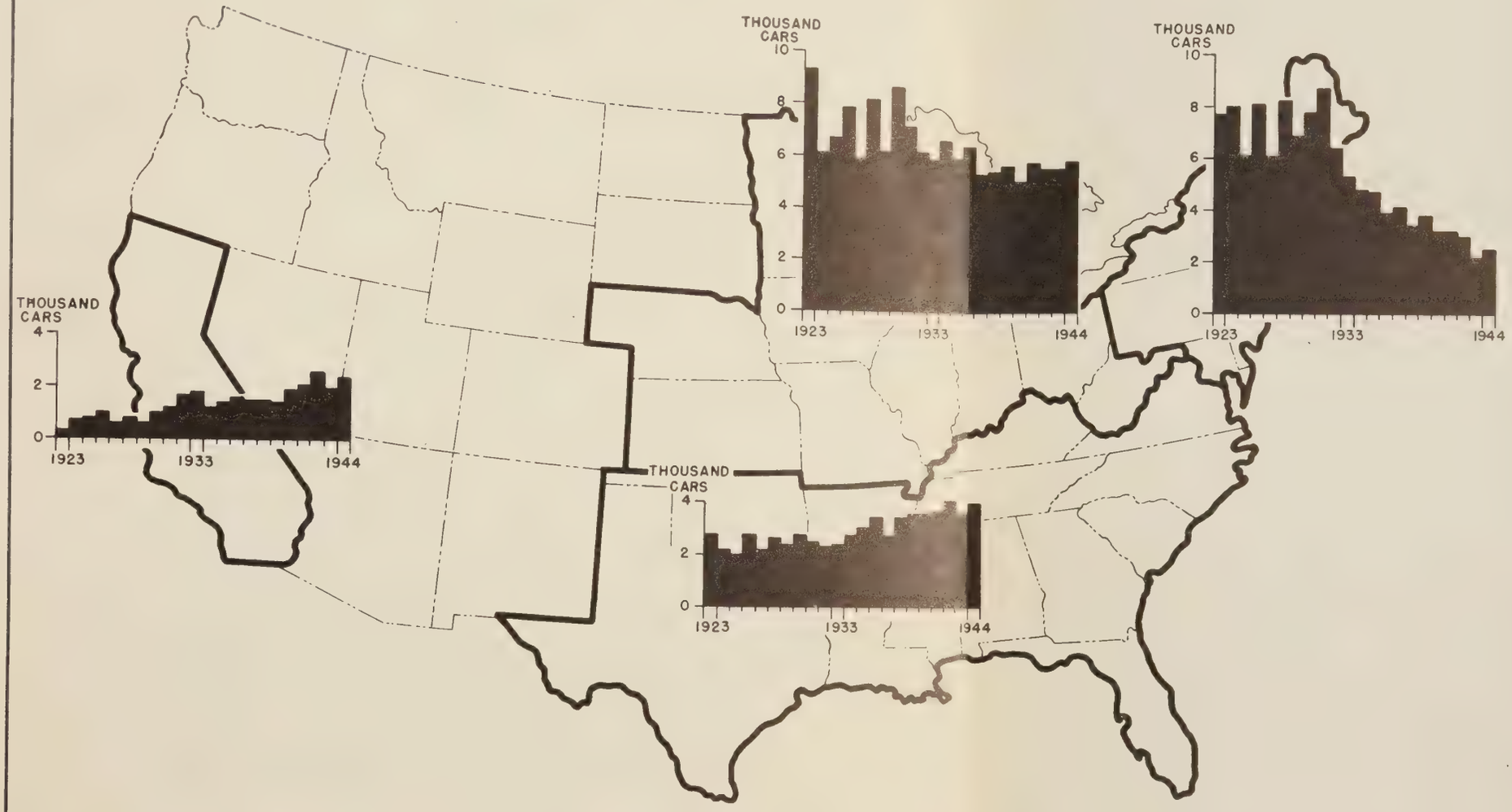


FIG. 12

APPLES

TOTAL CARLOT SHIPMENTS OF WASHINGTON APPLES AND UNLOADS IN 61 CITIES GROUPED BY REGIONS

Four-Year Moving Averages of the Shipments and unloads of Calendar Years 1923-44

FROM TABLES 7 AND 8

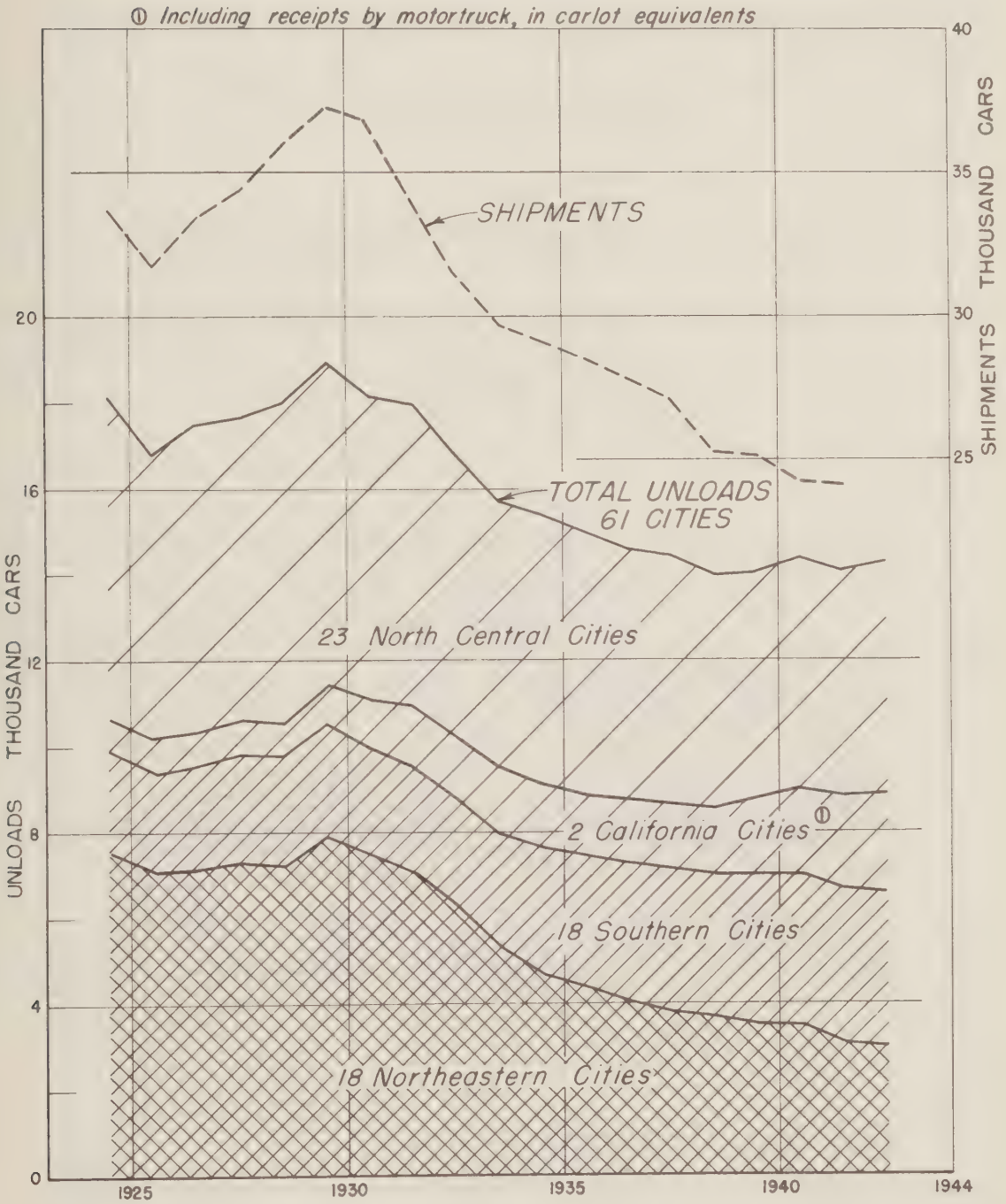


FIG. 13

APPLES

REGIONAL PERCENTAGES OF THE ANNUAL CARLOT UNLOADS OF WASHINGTON APPLES IN 61 CITIES, 1923–44

Four-Year Moving Averages of the Percentages in each Group of Cities

100 Percent = total unloads of Washington apples in all 61 cities during each calendar year.

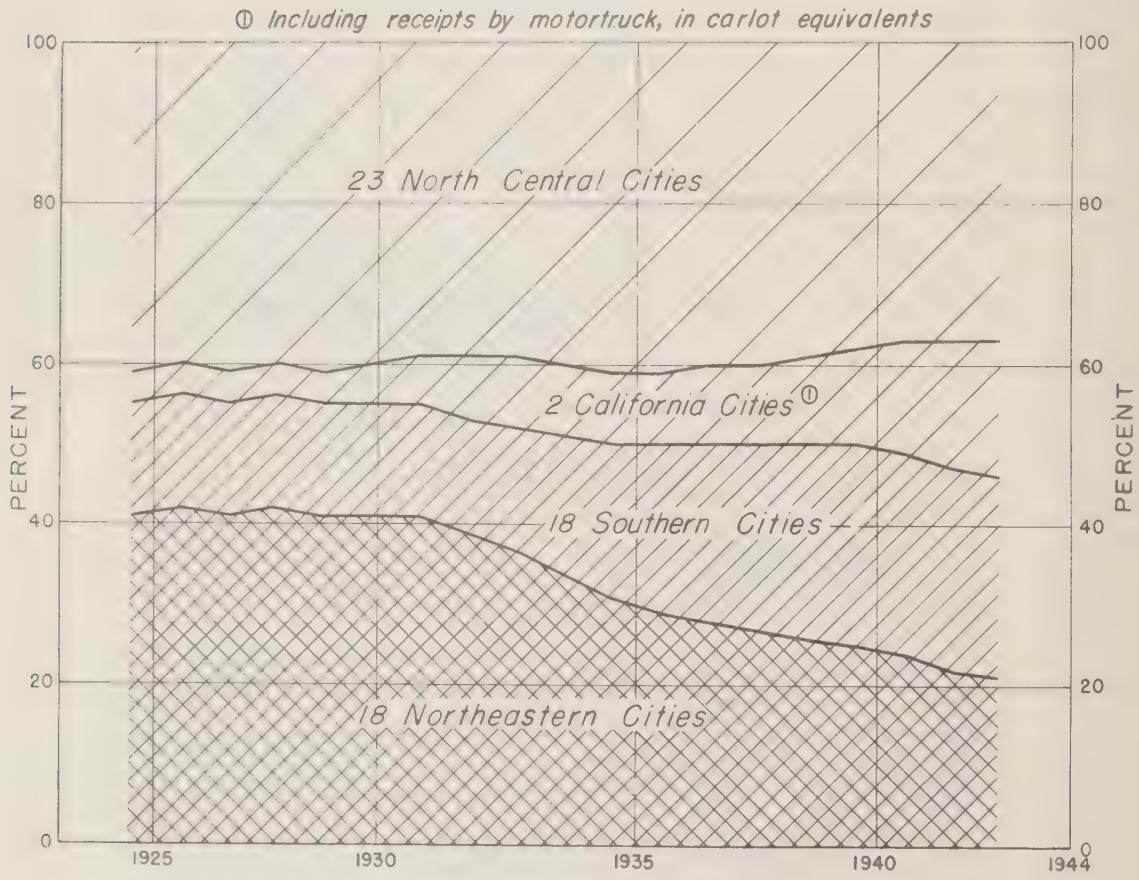


FIG. 14

APPLES

SEASON AVERAGE PRICE PER BUSHEL RECEIVED BY GROWERS, WASHINGTON AND UNITED STATES, 1909-44

FROM TABLE 9

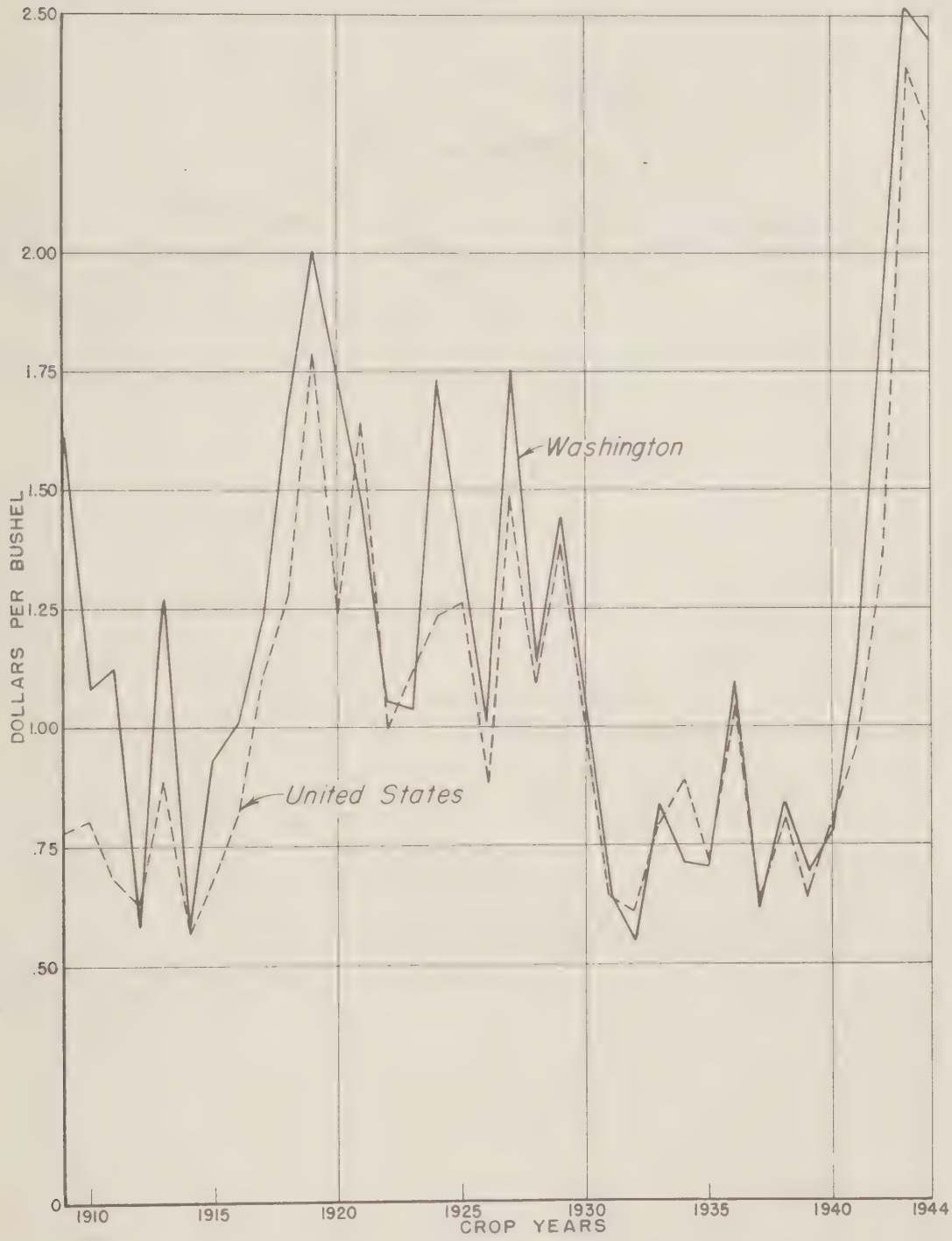
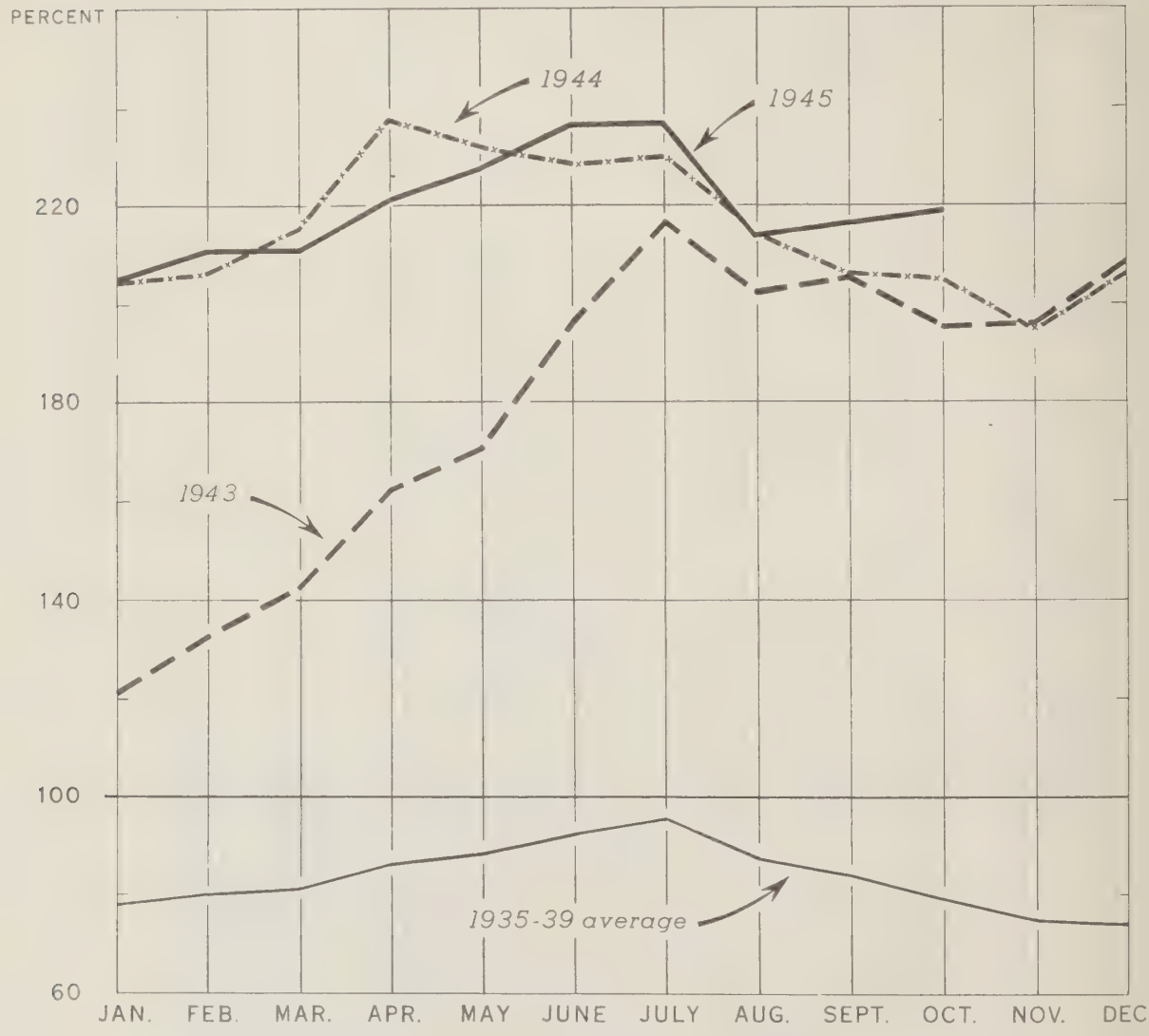


FIG. 15

PRICES RECEIVED BY FARMERS FOR PRINCIPAL FRUITS, UNITED STATES, AVERAGE 1935-39, ANNUAL 1943-45

INDEX NUMBERS (AUGUST 1909-JULY 1914=100)



U. S. DEPARTMENT OF AGRICULTURE FIG. 16 NEG. 43848 BUREAU OF AGRICULTURAL ECONOMICS

GRAPEFRUIT AND ORANGES

TOTAL PRODUCTION BY SEASONS, AND SEASON AVERAGE EQUIVALENT ON-TREE RETURNS TO GROWERS FOR FRESH MARKET AND FOR PROCESSING, UNITED STATES, 1919-44

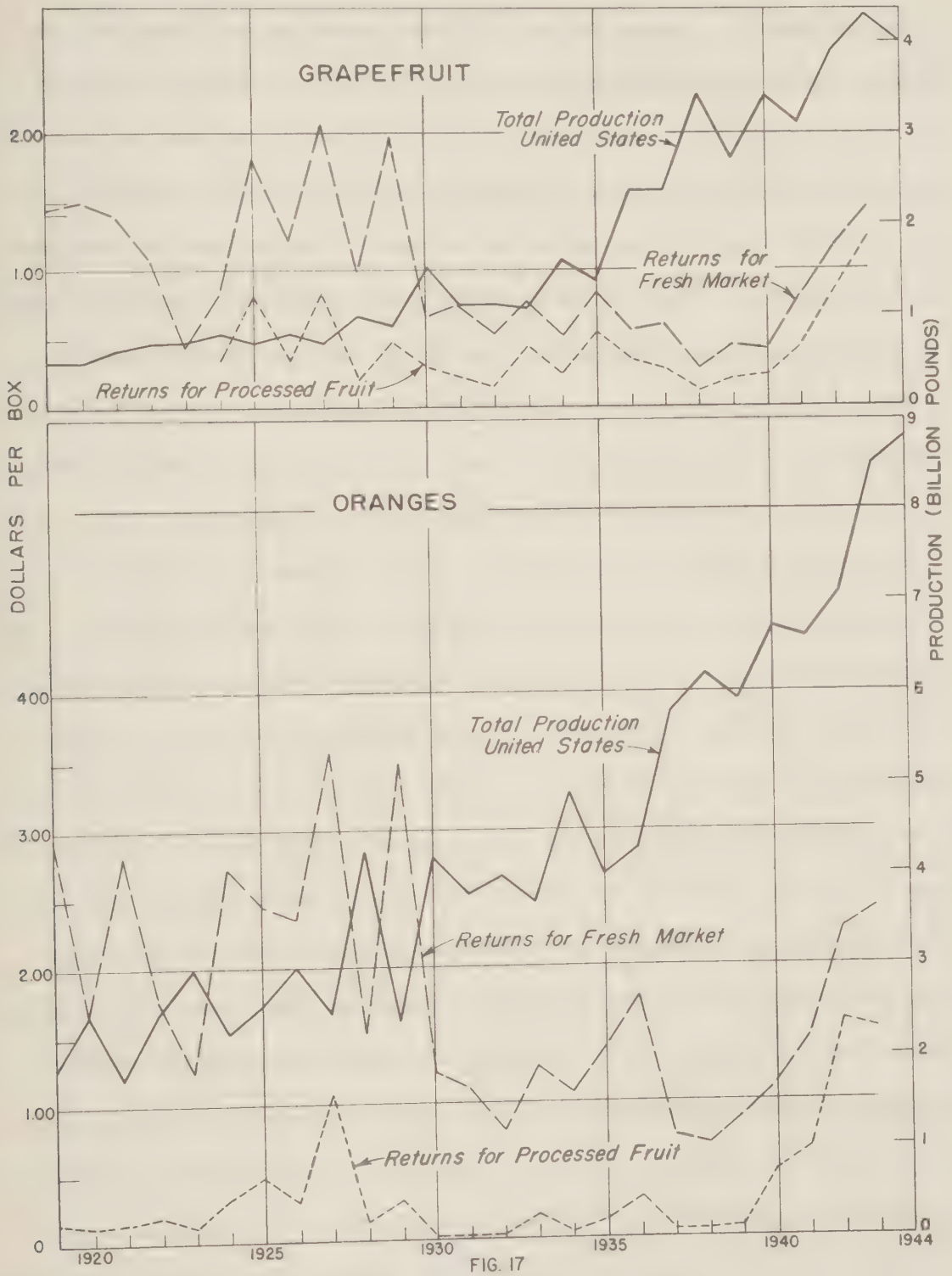


FIG. 17

PEACHES

Washington peaches for processing offer the most favorable opportunity for expansion among the soft fruits. Experience of the last few years has shown that from the Washington Elberta a canned peach can be produced of finer flavor than comes from either the freestone or clingstone of California, which is the major peach-canning area of the country. If the product placed upon the market is maintained at the quality levels which this experience has shown to be possible, there is good reason to expect that the Washington canned-peach industry can supply a considerable part of the national demand. Unless superior quality of the product is maintained, however, it is unlikely that much progress will be made in competition with the large and established industry in California.

Production of peaches in the Northwest has been a small part of the total crop, not only of the United States but in the western region. The combined production in Washington and Oregon has been but a very small proportion of that in California, and until the last few years, it moved almost entirely to fresh market (fig. 18). At the time the crop matures in the Northwest, however, peaches are available from many other producing areas, all the way from California to New York State. Consequently the outlets for peaches grown in the Northwest have been limited primarily to the area from Puget Sound through the Dakotas. The fresh market in this area will expand as the population increases, but because of the geographic distribution and seasonality of other producing areas it is unlikely that fresh peaches from Washington and Oregon will reach more distant markets in quantity.

More than 90 percent of the peaches canned in the United States have been packed in California (fig. 18 and table 12). Most of these have been

clingstones. The largest peach pack in Washington and Oregon combined thus far has been 770 thousand cases, whereas the total California pack for many years has ranged between 10 and 14 million cases. As nearly all the national pack is made on the West Coast, Washington would have approximately the same transportation costs to the major markets. If full advantage is taken of the opportunity to put out a superior product, Washington can compete successfully for a considerable share of the country's market for canned peaches.

The Elberta is the canning variety. The Hale grown in the Northwest is well adapted to freezing, and material expansion of this method of processing appears probable. The firm flesh and rich color of the Hale hold up well in freezing, and the bright red color around the pit is a further asset. This variety is not well suited for canning, because the color around the pit changes to an undesirable shade, and discolors the sirup. As produced in the past the Hale has been generally too large for canning in halves, especially as a family dessert pack. Some are canned, sliced, or used for fruit cocktail, but with the rapid expansion of the freezing industry the Hale is "a natural" for that form of processing.

No estimate can be made of the potential volume of Washington peaches that can be grown for processing. The outcome will depend principally on the degree to which high quality of product is maintained. If it is maintained, the production from large acreages can be utilized by the processors.

Peaches have been processed in Washington in appreciable quantity for only a few years, therefore information is limited on the prices that

have been received by the growers for fruit to be processed. Such prices are shown in figure 19 and table 14 for the period 1937-44. As is to be expected, the returns have been closely related to the California price for peaches for canning, and they may be expected to continue much the same relationship. During the last two decades the California canning price has ranged mostly between $20 and $30 per ton, with a few years much higher and some years much lower.

Considerable quantities of California peaches have not been harvested during many seasons (table 11). Over long periods, production in that State doubtless will be brought to approximate balance with the effective demand, but there is in prospect no shortage of peaches for processing. This further emphasizes the fact that the Northwest can expect to obtain a larger share of the market only by producing a product of higher quality.

APRICOTS

California, Washington, and Utah had 98 percent of the production of apricots reported in the Census of 1940. Of the total production in these three States, California averaged about 92 percent during the 10-year period 1935-44, Washington 6 percent, and Utah 2 percent. California production varies tremendously from season to season (fig. 20). The widest difference was during the successive years of 1943 and 1944, when the crops were, respectively, 80 and 524 thousand tons. A relatively small part of the California crop is shipped fresh. A considerably larger part is canned and frozen, the quantity so used varying from year to year in proportion to size of crop. The remainder is dried, and in most years this has been the greater part of the total production.

The varieties grown in California, and the acreage of each variety in 1944 as reported by the California Crop and Livestock Reporting Service, are as follows:

Blenheim and Royal	55,937 acres
Tilton	11,029 "
Moorpark and Hemskirk	1,946 "
Other varieties	2,468 "
Total	71,380 acres

Shipments to fresh market are principally of the Tilton and Royal varieties. The Blenheim is best adapted to processing, and nearly all of that variety is canned, frozen, or dried.

In Washington, the greater part of the production is of the Moorpark variety, because in that State it yields more heavily than either the Tilton or the Blenheim. Most of the crop has been sold for fresh market (fig. 20). Distribution of the fresh fruit extends from Puget Sound to the Great Lakes. A major outlet is for home canning in the northern Great Plains and in northern Cornbelt States. The Washington crop matures

after the California harvest, but only small quantities are shipped from Washington to eastern cities. The Moorpark ripens unevenly within the fruit, and does not have as attractive an appearance as the Royal or Tilton. Hence it is handicapped in markets which only a short time before were supplied with the other varieties.

The Moorpark is not suitable for commercial canning, because the skin slips off and the flesh does not retain its shape. When frozen, it is too pale to be attractive. Hence it cannot compete successfully in the processed market with the California Blenheim, except in the States in which it has an appreciable advantage in the cost of transportation. Neither will the Blenheim grown in Washington compete with the same variety grown in California, because of heavier yields in the latter State.

Market outlets for Washington-grown apricots appear to be limited to the tier of northern States mentioned above. That market will grow as the population increases, which may be some 15 to 20 percent in total during the next two decades. If average yields per tree are comparable to those of the past, this would represent an increase of from 50 to 75 thousand to the 370 thousand trees enumerated in the State in the Census of 1940.

The season average price per ton received by growers for Washington apricots since 1929 is shown in table 15 and figure 21. During the period 1935-39, the fresh market returns averaged about $55 per ton. Seasonal prices have fluctuated around the California price, and in all probability will continue at the same general levels as are established for the much greater quantities of the fruit that are marketed from that State.

CHERRIES

Eighty percent or more of the sweet cherries produced in the United States are grown in the three Pacific Coast States - Washington, Oregon, and California. Most of the sour cherries are grown in the East and mainly are processed for culinary purposes.

A large proportion of the sweet-cherry production is shipped in fresh form to the markets throughout the country and sold as a dessert fruit. The remainder is processed in various forms. The greater part of the production in Washington has been sold for fresh market (fig. 22 and table 17). The reverse is true in Oregon where most of the crop has been processed.

Fresh-market cherries are to a considerable extent a luxury product. They are highly perishable, and shipment to distant markets is hazardous. At the high returns received for fresh market during the war years, extensive use has been made of railway express. This is faster and insures better condition on arrival but is much more expensive than refrigerated freight and will be feasible only at relatively high prices for the fruit. Sweet cherries have been considered as one of the products suitable for air shipment, and may so move in some volume when air freight becomes established. This will be particularly true with early-season shipments, for which time is the essence of price. Rail express will make considerable saving in time over rail freight shipment and, so far as can now be foreseen, rail express will be considerably cheaper per ton mile than air shipment. Except for the more distant markets, the saving in time and consequent better quality and condition of the fruit resulting from air shipment as compared with rail express may not add enough to the final selling price to justify the air rates.

In any event, the shipment of sweet cherries from the Pacific Coast to midwestern and eastern markets will probably continue to involve the hazardous movement by freight or the quicker but more costly movement by either rail express or air. By any method of transportation, sweet cherries are likely to continue to be a luxury dessert fruit. As such, returns from the fresh market will be highly responsive to levels of economic activity and consumer income.

Production of sweet cherries in the Northwest has increased sharply since 1935 (Table17). No recent data are available on tree numbers or rate of planting, but general information in the fruit areas indicates that considerable new plantings of cherries have been made. Until recent years much of the cherry plantings were in borders or scattered in the orchards with other fruit, but some recent plantings have been made in blocks.

Data on prices received by growers for sweet cherries and sour cherries are available by States only since 1938. These are shown for Washington and Oregon in table 18, and for the two States combined, for fresh market and for processing, on figure 23.

Information on price received for all cherries, average for the United States, has been compiled by the Department of Agriculture since 1924. From these prices for all cherries, estimates for the two types have been computed for the country as a whole, but not by States. The estimated United States average returns for all sweet cherries, 1925-44, are indicated in figure 23 and in table 18. It is probable that the prices in Washington and Oregon bore the same close relationship to the average United States price before 1938 as they have since. Figure 22 indicates that from 1924 to 1930, growers received average prices ranging

mostly $150-170 per ton. During the early 1930's the season average price dropped as low as $57 per ton, and during the decade 1930-39 averaged about $95. Starting with 1940, prices shot upward to more than $300 per ton.

These wide fluctuations indicate the responsiveness of prices of sweet cherries to national conditions of economic activity and consumer income. Such variations are to be expected in the future, and with the sharp increase in production that has been evident in recent years, increasing difficulties are likely to be experienced in marketing the crop during coming years. Figure 22 does not portend a rosy future for the sweet-cherry industry, particularly during periods of less-than-full national employment and declines in consumer incomes.

PEARS

The production and utilization of pears in the three Pacific Coast States is shown in figures 24 and 25, and in table 20. More than 90 percent of all pears processed in the United States (canned and dried) are produced in Washington, Oregon, and California. Total production of Bartletts has nearly doubled during the last 20 years, and that of other varieties has trebled. The season average price received by growers in Washington ranged from $18 to $30 per ton during the period 1935-39 (fig. 26 and table 19).

The crux of the pear situation for some years to come is that black cloud of fruit left unharvested, indicated on figures 24 and 25. This has almost disappeared under the heavy consumption during the war years, but may again appear. The problem of the pear industry is still one of utilization of the production from existing acreage.

Table 10.- Peaches: Production in principal late-summer states, and total United States, 1925-44.

Year	Wash-ington	Oregon	Cali-fornia	Colo-rado	Mich-igan	Ill-inois	New York	New Jersey	United States
				Thousand bushels					
1925	800	212	16,835	420	483	500	1,668	1,464	46,101
1926	1,344	384	23,210	1,104	1,334	2,296	2,002	2,299	67,267
1927	297	164	20,710	984	615	899	936	1,949	43,853
1928	1,462	292	26,335	720	1,235	1,402	1,800	1,104	66,645
1929	1,225	227	14,001	959	998	2,864	1,078	1,990	45,358
1930	688	300	34,253	749	999	39	1,782	1,316	56,392
1931	1,050	220	25,002	1,120	2,295	4,000	2,074	2,190	77,846
1932	1,320	348	23,710	1,201	2,123	237	1,884	1,633	44,108
1933	255	227	23,002	562	251	1,348	1,222	945	46,141
1934	1,470	316	21,460	1,210	644	490	98	21	48,602
1935	1,040	319	18,543	1,280	2,602	2,701	1,508	656	55,440
1936	1,856	309	22,127	1,345	1,894	256	1,232	1,052	48,756
1937	1,186	314	24,002	1,583	3,052	2,117	1,806	1,226	60,049
1938	1,887	456	21,252	1,599	1,625	1,425	1,219	891	53,922
1939	1,662	550	25,127	1,575	3,488	1,852	1,877	1,130	64,222
1940	2,094	520	24,377	1,950	2,280	160	1,485	1,224	57,774
1941	2,000	422	23,293	1,516	3,864	2,340	1,649	1,195	74,905
1942	2,168	535	28,752	1,490	2,150	652	1,615	1,228	66,365
1943	2,052	418	24,961	1,978	1,452	400	95	918	41,979
1944	2,604	606	34,044	2,112	3,600	1,470	1,824	1,193	75,963

Source: "Peaches: Revised Estimates of Production, 1909-41," U. S. Department of Agriculture, June 1943, and Annual Summaries: Average, Yield and Production of Principal Crops, December 1943 and December 1945.

Table 11.- Peaches: Utilization of production, California, 1914-44.

Year	CLINGSTONES					FREESTONES				
	Total Production	Utilization				Total Production	Utilization			
		Fresh Market	Dried	Other Processed	Unharvested		Fresh Market	Dried	Other Processed	Unharvested
	Thousand Tons									
1914	73.0	2.9	-	67.9	-	255.0	32.5	193.0	25.4	-
1915	62.0	3.7	-	56.0	-	229.0	27.9	177.4	19.3	-
1916	67.0	4.1	-	60.4	-	217.0	30.4	154.0	28.0	-
1917	91.0	4.6	-	83.9	-	292.0	36.6	214.5	36.1	-
1918	81.0	5.7	-	72.6	-	192.0	44.7	110.0	32.4	-
1919	128.0	6.7	-	118.5	-	300.0	39.9	209.5	45.6	-
1920	132.0	8.1	-	121.1	-	247.0	44.4	161.5	36.0	-
1921	109.0	9.4	-	96.8	-	217.0	48.5	125.5	38.0	-
1922	195.0	9.8	-	182.4	-	240.0	36.6	168.0	30.6	-
1923	169.0	13.0	-	153.3	-	232.0	51.1	156.0	20.3	-
1924	137.0	9.6	-	124.8	-	208.0	34.4	146.8	22.4	-
1925	232.0	14.3	-	215.3	-	172.0	43.0	96.9	27.9	-
1926	331.0	11.1	-	317.5	-	226.0	34.1	169.1	19.0	-
1927	322.0	19.4	-	235.4	68.0	175.0	61.0	103.0	7.5	-
1928	414.0	20.0	-	322.0	70.0	218.0	41.9	169.0	3.8	-
1929	180.0	5.2	-	173.3	-	156.0	44.1	100.3	9.1	-
1930	542.0	13.9	-	288.1	238.3	280.0	92.9	169.8	2.8	12.0
1931	397.0	12.3	8.1	181.5	195.5	203.0	64.5	134.3	1.7	-
1932	340.0	31.5	3.6	139.4	164.0	229.0	65.2	141.9	.6	19.0
1933	351.0	18.5	11.5	233.9	85.7	201.0	53.9	143.4	1.5	-
1934	324.0	25.3	48.0	191.3	58.0	191.0	48.9	132.2	7.9	-
1935	288.0	8.8	34.4	243.4	-	157.0	44.1	102.4	8.5	-
1936	337.0	20.7	50.0	265.0	-	194.0	56.8	124.2	11.0	-
1937	370.0	12.0	34.0	322.7	-	206.0	62.2	117.5	24.3	-
1938	313.0	22.9	26.0	241.8	21.0	197.0	66.8	118.8	9.4	-
1939	372.0	28.5	30.0	299.2	13.0	231.0	77.5	130.0	21.5	-
1940	353.0	12.1	41.4	283.2	15.0	232.0	79.8	122.5	27.7	-
1941	332.0	7.5	11.2	312.0	-	227.0	83.1	86.7	55.2	-
1942	424.0	11.1	21.2	374.4	16.0	266.0	103.2	132.6	27.2	1.0
1943	350.0	11.7	6.7	323.3	7.0	249.0	124.8	100.7	21.5	-
1944	492.0	19.0	12.5	409.2	50.0	325.0	140.4	162.5	19.1	1.0

Source: "Peaches: Utilization of Production, United States Total and Selected States", U. S. Department of Agriculture, May 1944, and "Fruit Production and Utilization", 1934-44", U. S. Department of Agriculture, June 1945.

Table 12.- Peaches: Canned pack in California, Washington, Oregon, other states, and total United States, 1935-44.

Year	California			Wash-ington	Oregon	Wash. and Oregon	Wash. Oregon Calif.	Other States	Total U.S.
	Cling-stones	Free-stones	Total						
	Thousand Cases 1/								
1935	10,850	366	11,216	5	3	8	11,224	268	11,492
1936	10,236	475	10,711	39	75	114	10,825	144	10,969
1937	12,205	1,043	13,248	75	80	155	13,328	204	13,532
1938	9,446	376	9,822	113	61	174	9,996	383	10,379
1939	10,775	882	11,657	218	110	328	11,985	233	12,218
1940	9,608	1,134	10,742	300	107	407	11,149	118	11,297
1941	10,581	2,152	12,733	439	200	639	13,372	1,172	14,509
1942	12,902	1,089	13,991	540	227	767	14,758	1,968	16,726
1943	10,182	537	10,719	107	220	327	11,046	46	11,092
1944	12,280	339	12,619	348	150	498	13,117	2/	-

1/ California pack on basis of 24/2½ cans per case; other states, actual cases.
2/ Not available.

Source: "Western Canner & Packer"

Table 13.- Peaches: Approximate percentages canned of the total production in Washington and Oregon, 1935-44.

Year	Production (Fresh Fruit) 1/	Canned		Percent Canned of Production
		Actual Cases 2/	Fresh Basis 3/	
	Tons	Cases	Tons	Percent
1935	32,616	7,700	200	1
1936	51,960	113,300	2,800	2
1937	36,000	155,200	3,800	11
1938	56,232	174,200	4,200	7
1939	53,088	327,800	8,000	15
Average 1935-39	45,979	155,600	3,800	8
1940	62,736	406,800	9,900	16
1941	58,128	639,400	15,600	27
1942	64,872	766,700	18,700	29
1943	59,280	326,200	8,000	13
1944	77,040	497,700	12,100	16
Average 1940-44	64,411	527,400	12,900	20

1/ Estimates of the Crop Reporting Board, U. S. Department of Agriculture
2/ Compiled from "Western Canner and Packer"
3/ Canned fruit converted to fresh basis; conversion factor: 48.8 lbs. of fresh fruit per case of 24 No. 2½ cans.

Table 14.- Peaches: Season average price per ton received by growers for peaches for canning, California 1914-44 and Washington, 1937-44

Year	California		Year	California		Washington
	Clingstones	Freestones		Clingstones	Freestones	
	Dollars per ton					
1914	25.00	21.00	1930	20.00	20.00	-
1915	12.00	10.00	1931	16.00	16.00	-
1916	29.00	23.00	1932	9.30	12.00	-
1917	35.00	29.00	1933	18.70	17.00	-
1918	50.00	34.00	1934	30.00	22.00	-
1919	88.00	58.00	1935	29.00	23.00	-
1920	100.00	64.00	1936	29.00	22.00	-
1921	35.00	27.00	1937	41.00	28.00	33.00
1922	60.00	45.00	1938	8.70	16.00	17.00
1923	30.00	23.00	1939	21.00	18.00	25.50
1924	45.00	23.00	1940	20.60	18.50	26.70
1925	35.00	34.00	1941	48.00	26.00	35.10
1926	38.00	33.00	1942	60.00	40.00	54.00
1927	22.50	22.00	1943	65.00	55.00	65.60
1928	21.00	18.00	1944	62.30	55.00	63.20
1929	68.00	35.00				

Source: "Prices Received by Growers for Fruit and Nut Crops, by Type and Utilization Groups," U. S. Department of Agriculture, January 1945.

Table 15.- Apricots: Season average price per ton received by growers, fresh market and canning, California and Washington 1929-44

Year	California		Washington	
	Fresh market	Canning	Fresh market	Canning
	Dollars per ton			
1929	73.10	70.00	77.40	49.00
1930	61.60	38.00	51.70	29.00
1931	36.90	25.00	34.10	15.00
1932	27.50	17.00	27.80	12.00
1933	35.40	28.00	63.50	35.00
1934	56.10	61.00	53.60	24.00
1935	51.60	53.00	62.40	33.00
1936	43.50	31.00	67.20	40.00
1937	55.50	42.00	63.50	39.00
1938	40.30	23.00	35.40	15.00
1939	44.00	27.00	41.10	24.00
1940	74.80	62.00	42.20	31.00
1941	58.40	45.00	44.10	35.80
1942	78.70	64.00	91.60	55.70
1943	155.00	102.00	209.00	150.00
1944	151.00	92.00	168.00	89.50

Source: "Prices Received by Growers for Fruit and Nut Crops, by Type and Utilization Groups," U. S. Department of Agriculture, January 1945, and "Deciduous Fruit Prices", U. S. Department of Agriculture, March 1946.

Table 16.- Apricots: Production and Utilization, Washington, California, Utah, and 3-State Total 1929-44.

Year	Total Production	Utilization 1/ Fresh Market	Canned	Other Processed	Unharvested	Total Production	Utilization 1/ Fresh Market	Canned	Other Processed	Unharvested
	Thousand Tons									
	WASHINGTON					CALIFORNIA				
1929	6.5	5.8	.3	.2	-	212.0	15.4	73.1	121.6	-
1930	3.6	3.4	-	.1	-	194.0	16.8	35.5	131.0	9.0
1931	6.0	5.4	.4	.1	-	274.0	24.2	36.5	207.0	4.0
1932	4.8	4.4	.2	.1	-	266.0	23.9	32.8	194.0	13.0
1933	2.3	2.0	-	.1	-	268.0	16.2	43.9	206.0	-
1934	11.3	7.7	2.9	.1	.2	139.0	12.0	32.9	92.4	-
1935	9.8	6.2	1.7	.2	1.2	216.0	14.8	57.5	142.0	-
1936	7.2	5.6	.9	.4	-	248.0	16.4	52.7	177.2	-
1937	11.8	10.0	1.3	.3	-	311.0	19.3	101.0	189.0	-
1938	14.8	10.4	1.2	.3	2.2	166.0	18.6	28.1	117.8	-
1939	14.3	11.9	1.2	.3	.3	312.0	21.1	55.7	225.5	8.0
1940	16.3	12.0	3.0	.3	.5	103.0	13.0	30.0	58.3	-
1941	14.6	10.3	3.3	.4	-	198.0	15.7	72.2	108.4	-
1942	21.0	14.0	4.8	1.6	-	204.0	17.9	65.0	114.4	5.0
1943	15.4	12.7	.3	1.8	-	80.0	16.2	21.0	41.1	-
1944	25.0	18.4	.8	5.1	-	324.0	34.6	128.6	159.0	-
	UTAH					TOTAL: WASHINGTON, CALIFORNIA, UTAH				
1929	1.9	.9	.7	-	-	220.4	22.1	74.1	121.8	-
1930	.8	.4	.1	-	-	198.4	20.6	35.6	131.1	9.0
1931	1.0	.5	.1	-	-	281.0	30.1	37.0	207.1	4.0
1932	1.8	1.0	.3	-	-	272.6	29.3	33.3	194.1	13.0
1933	.8	.6	-	-	-	271.1	18.8	43.9	206.1	-
1934	3.4	1.0	1.9	-	-	153.7	20.7	37.7	92.5	.2
1935	1.7	1.0	.2	-	-	227.5	22.1	59.4	142.2	1.2
1936	1.8	.6	.7	-	-	257.0	22.6	54.3	177.6	-
1937	1.6	.7	.5	-	-	324.5	29.7	102.9	189.3	-
1938	4.9	1.7	2.6	-	-	185.4	30.6	31.9	117.9	2.2
1939	5.2	1.5	3.1	-	-	331.5	34.5	60.0	225.8	8.3
1940	7.8	1.2	5.9	-	-	127.1	26.2	38.9	58.6	.5
1941	1.3	.7	.1	-	-	213.9	26.7	75.6	108.8	-
1942	3.1	1.6	1.0	-	-	228.1	33.5	70.8	116.0	5.0
1943	10.1	5.3	1.3	2.8	-	105.5	34.1	22.5	45.8	-
1944	5.9	4.3	.2	.7	-	354.9	57.3	129.6	164.8	-

1/ Does not include quantities used by farm households.

Source: "Apricots, Plums, Figs, Olives, and Cranberries, Utilization of Production, 1942 with Comparisons", U. S. Department of Agriculture, May 1944.

Table 17.- Cherries: Production and utilization, sweet and sour varieties, Washington, Oregon and California, 1934-44, and percentages 3-state production of United States production

Year	Sweet Varieties				Sour Varieties			
	Total Production	Utilization 1/ Fresh Market	Processed	Unharvested	Total Production	Utilization 1/ Fresh Market	Processed	Unharvested
				Tons				
				WASHINGTON				
1934	14,800	8,882	2,318	1,900	4,700	517	2,663	600
1935	13,200	7,708	3,052	700	5,000	518	3,272	300
1936	13,700	6,734	2,686	2,500	5,600	607	3,793	300
1937	10,400	4,030	2,950	1,700	5,600	635	3,865	200
1938	19,900	9,406	4,444	4,200	6,800	780	4,520	600
1939	20,600	12,189	5,221	1,300	6,200	720	4,390	200
1940	23,000	14,028	5,352	1,700	7,100	751	4,569	900
1941	24,700	15,490	7,260	0	5,000	674	1,946	1,500
1942	25,900	13,293	7,527	3,100	5,000	1,012	2,248	900
1943	27,100	14,930	8,790	1,000	4,200	1,190	1,410	600
1944	23,100	12,220	8,500	0	6,000	880	3,920	200
				OREGON				
1934	11,700	2,031	7,569	1,000	1,300	150	950	0
1935	13,600	3,015	8,985	400	2,100	255	1,615	0
1936	14,100	3,255	9,645	1,000	1,550	200	1,150	0
1937	12,700	1,800	8,900	900	2,400	254	1,746	150
1938	18,100	3,200	11,700	1,900	2,500	250	1,750	250
1939	19,600	2,700	14,000	1,500	2,600	265	1,935	150
1940	20,300	3,984	14,816	0	2,350	255	1,645	200
1941	18,900	2,852	13,848	800	1,400	188	812	200
1942	18,400	3,586	10,914	2,300	2,400	281	1,819	50
1943	21,700	4,100	14,200	1,600	2,200	350	1,550	0
1944	18,100	3,700	12,400	300	2,600	400	1,900	0
				CALIFORNIA				
1934	17,000	9,650	7,000	-				
1935	15,000	7,500	7,200	-				
1936	23,000	11,700	11,050	-				
1937	21,600	10,800	10,600	-				
1938	30,000	14,100	10,800	4,800				
1939	36,000	15,600	17,100	3,000				
1940	11,000	6,900	3,800	-				
1941	21,000	12,000	8,700	-				
1942	33,000	15,400	12,300	5,000				
1943	17,000	9,500	6,200	-				
1944	27,000	15,900	10,800	-				

(Continued)

Table 17.- (Cont'd.) Cherries: Production and utilization, sweet and sour varieties, Washington, Oregon and California, 1934-44, and percentages 3-state production of United States production

Year	SWEET VARIETIES-TOTAL PRODUCTION			SOUR VARIETIES-TOTAL PRODUCTION		
	3 Pacific States	United States	3 States as percent of U. S.	3 Pacific States	United States	3 States as percent of U. S.
	Tons	Tons	Percent	Tons	Tons	Percent
1934	43,500			6,000		
1935	41,800			7,100		
1936	50,800			7,150		
1937	44,700			8,000		
1938	68,000	79,360	86	9,300	64,850	14
1939	76,200	87,720	87	8,800	96,770	9
1940	54,300	68,230	80	9,450	104,690	9
1941	64,600	80,080	81	6,400	81,400	8
1942	77,300	90,960	85	7,400	105,240	7
1943	65,800	75,150	88	6,400	42,660	15
1944	68,200	85,300	80	8,600	116,790	7

1/ Utilization of quantities sold, does not include quantities used by farm households.

Source: "Cherries: Utilization of Production, 1942, with Comparisons", February 1944, and "Fruits: Production and Utilization, 1934-44", June 1945, U. S. Department of Agriculture

Table 18.- Cherries, sweet: Season average price per ton received by growers, United States, all utilization, 1925-44, and Washington and Oregon, fresh market and processing, 1938-44 1/

Year	United States 2/	Year	United States	Washington		Oregon	
				Fresh market 3/	Processing	Fresh market 3/	Processing
				Dollars per ton			
1925	164.30	1935	105.30	-		-	
1926	150.78	1936	94.74	-		-	
1927	172.06	1937	149.24	-		-	
1928	172.72	1938	75.70	88.30	55.00	68.00	53.00
1929	185.41	1939	82.70	111.00	61.30	93.00	68.00
1930	141.67	1940	111.00	124.00	93.80	113.00	94.00
1931	91.12	1941	116.00	111.00	103.00	120.00	114.00
1932	56.66	1942	141.00	164.00	115.00	137.00	124.00
1933	62.88	1943	230.00	253.00	185.00	249.00	187.00
1934	84.56	1944	270.00	312.00	229.00	318.00	248.00

1/ Not available for seasons prior to 1938.
2/ Average for all types of utilization and method of sale.
3/ Equivalent returns for bulk fruit at the packing house door.

Source: "Prices Received by Growers for Fruit and Nut Crops, by Type and Utilization Groups," U.S. Department of Agriculture, January 1945, and "Deciduous Fruit Prices," U.S. Department of Agriculture, March 1946.

Table 19.- Pears: Season average price per ton received by growers in Washington for Bartletts, and Other Varieties, 1925-44

Year	Bartletts	Other Varieties	Year	Bartletts	Other Varieties
	Dollars per ton				
1925	60.00	78.00	1935	20.00	40.00
1926	34.00	58.00	1936	26.00	42.00
1927	62.00	98.00	1937	26.00	34.00
1928	42.00	64.00	1938	18.00	38.00
1929	78.00	82.00	1939	30.00	34.00
1930	24.00	48.00	1940	26.00	36.00
1931	28.00	52.00	1941	42.00	58.00
1932	11.60	22.00	1942	71.20	85.60
1933	16.00	34.00	1943	92.80	149.60
1934	30.00	36.00	1944	72.00	126.00

Source: "Prices Received by Growers for Fruit and Nut Crops, by Type and Utilization Groups," U.S. Department of Agriculture, January 1945. (Prices per bushel converted to prices per ton, 40 bushels per ton).

Table 20.- Pears: Production and utilization, Bartletts and other varieties, Washington, Oregon, California and 3-state totals, 1925-44

Year	Bartletts					Other Varieties			
	Total Production	Utilization 1/ Fresh Market	Canned 2/	Dried	Unharvested	Total Production	Utilization 1/ Fresh Market	Processed	Unharvested
				Tons					
				WASHINGTON					
1925	49,150	20,230	26,550	-	-	12,950	11,900		-
1926	65,300	37,600	24,700	-	-	24,700	23,080		-
1927	36,820	21,870	12,650	-	-	13,580	12,530		-
1928	71,900	31,400	37,500	-	-	31,600	30,000		-
1929	61,450	18,100	40,400	-	-	21,600	20,250		-
1930	79,350	27,930	47,500	-	-	38,580	36,150	750	-
1931	68,300	21,680	43,000	-	-	31,100	28,820	750	-
1932	72,380	21,150	39,500	-	7,500	35,300	27,750	750	5,000
1933	86,300	23,150	58,500	-	-	40,800	33,750	750	4,500
1934	93,100	22,850	64,150	-	2,500	35,500	31,200	1,000	1,580
1935	102,780	27,810	67,900	-	3,250	49,500	43,230	1,100	3,470
1936	105,820	34,415	64,075	-	3,280	47,500	42,510	1,000	2,320
1937	111,250	38,720	65,650	-	2,580	53,750	44,700	1,000	6,400
1938	116,750	29,850	53,000	2,250	27,120	61,280	46,500	800	12,350
1939	105,500	23,650	65,050	3,430	8,620	49,500	33,825	2,775	11,300
1940	115,500	31,460	71,050	-	8,020	45,000	31,280	1,100	11,070
1941	130,000	33,780	91,070	-	-	43,850	40,100	130	2,100
1942	126,580	32,350	89,050	-	-	40,300	37,430	600	750
1943	97,650	39,300	51,050	1,350	-	34,000	30,200	2,250	-
1944	172,120	71,000	86,500	1,500	7,170	44,500	41,000	1,950	-
				OREGON					
1925	17,020	5,370	9,250	-	-	24,350	23,730	-	-
1926	28,580	14,000	12,000	-	-	26,500	25,750	-	-
1927	19,280	3,980	12,700	-	-	35,400	34,650	-	-
1928	30,680	12,500	15,300	-	-	46,120	45,320	-	-
1929	31,400	10,050	18,700	-	-	43,500	42,730	-	-
1930	33,780	14,100	16,700	-	-	54,480	53,430	-	-
1931	20,200	7,730	9,700	-	-	30,120	29,420	-	-
1932	26,900	14,050	10,000	-	-	47,520	37,820	-	8,750
1933	22,920	7,190	13,100	-	-	48,320	36,650	-	10,750
1934	28,780	5,180	20,800	-	-	36,880	31,550	-	4,550
1935	35,550	9,650	23,000	-	-	49,280	48,530	-	-
1936	39,700	14,400	22,400	-	-	53,350	49,680	-	2,820
1937	32,200	13,920	15,800	-	-	56,500	55,550	-	-
1938	40,350	11,700	17,000	-	8,750	65,000	59,770	-	4,280
1939	43,150	14,230	24,000	-	2,020	61,880	58,150	280	2,500

(Continued)

Table 20.- (Cont'd.) Pears: Production and utilization, Bartletts and other varieties, Washington, Oregon, California and 3-state totals, 1925-44.

Year	Bartletts					Other Varieties			
	Total Production	Utilization 1/ Fresh Market	Canned 2/	Dried	Unharvested	Total Production	Utilization 1/ Fresh Market	Processed	Unharvested
	Tons								
					OREGON (Cont'd.)				
1940	43,900	18,000	23,000	-	-	63,580	60,630	-	2,000
1941	44,350	17,025	24,425	-	-	56,900	52,520	180	3,250
1942	45,600	19,500	21,600	-	1,000	62,600	56,325	1,525	3,750
1943	34,650	18,470	13,500	-	-	35,780	33,380	1,650	-
1944	44,850	25,450	15,900	-	-	64,000	59,275	3,725	-
					CALIFORNIA				
1925	169,000	89,400	58,000	19,300	-	12,000	11,800	-	-
1926	188,000	111,300	51,000	23,400	-	16,000	15,800	-	-
1927	164,000	91,900	49,000	19,000	2,000	17,000	16,800	-	-
1928	204,000	107,900	61,500	30,600	2,000	22,000	21,800	-	-
1929	173,000	92,800	55,300	23,100	-	17,000	16,700	-	-
1930	241,000	135,100	49,300	24,800	30,000	32,000	30,800	-	1,000
1931	194,000	105,900	47,600	24,000	15,000	25,000	24,800	-	-
1932	217,000	89,200	37,300	30,000	59,000	27,000	22,800	-	4,000
1933	192,000	68,600	50,700	38,300	33,000	30,000	22,800	-	7,000
1934	200,000	95,500	70,100	27,100	6,000	34,000	30,800	-	3,000
1935	147,000	76,200	36,000	33,600	-	18,000	17,400	400	-
1936	210,000	90,000	74,500	44,400	-	31,000	30,100	700	-
1937	201,000	94,600	76,100	19,200	10,000	26,000	23,300	500	2,000
1938	236,000	113,000	70,500	35,400	16,000	48,000	45,800	-	2,000
1939	220,000	86,700	85,600	44,600	2,000	33,000	29,800	-	3,000
1940	190,000	80,700	86,300	16,900	5,000	36,000	21,300	10,500	4,000
1941	206,000	71,100	113,700	20,100	-	17,000	6,300	10,500	-
1942	212,000	66,600	128,000	14,300	2,000	22,000	10,600	11,200	-
1943	271,000	109,300	135,300	20,300	5,000	30,000	17,200	12,600	-
1944	220,000	81,700	115,200	19,000	3,000	30,000	15,500	14,300	-
					TOTAL: WASHINGTON, OREGON, CALIFORNIA				
1925	235,170	115,000	93,800	19,350	-	49,300	47,430	-	-
1926	281,880	162,900	87,700	23,400	-	67,200	64,630	-	-
1927	220,100	117,750	74,350	19,000	2,000	65,980	63,980	-	-
1928	306,580	151,800	114,300	30,600	2,000	99,720	97,120	-	-
1929	265,850	120,950	114,400	23,100	-	82,100	79,680	-	-
1930	354,130	177,130	113,500	24,800	30,000	125,060	120,380	750	1,000
1931	282,500	135,310	100,300	24,000	15,000	86,220	83,040	750	-
1932	316,280	124,400	86,800	30,000	66,500	109,820	88,370	750	17,750
1933	301,220	98,940	122,300	38,300	33,000	119,120	93,200	750	22,250
1934	321,880	123,530	155,050	27,100	8,500	106,380	93,550	1,000	9,130

(Continued)

Table 20.- (Cont'd.) Pears: Production and utilization, Bartletts and other varieties, Washington, Oregon, California and 3-state totals, 1925-44.

Year	Bartletts					Other Varieties			
	Total Production	Utilization 1/ Fresh Market	Canned 2/	Dried	Unharvested	Total Production	Utilization 1/ Fresh Market	Processed	Unharvested
	Tons								
	TOTAL: WASHINGTON, OREGON, CALIFORNIA (Cont'd.)								
1935	285,330	113,660	126,900	33,600	3,250	116,780	109,160	1,500	3,470
1936	355,520	138,815	160,975	44,400	3,280	131,850	122,290	1,700	5,140
1937	344,450	147,240	157,550	19,200	12,580	136,250	123,550	1,500	8,400
1938	393,100	154,550	140,500	37,650	51,870	174,280	152,070	800	18,630
1939	368,650	124,580	174,650	48,030	12,640	144,380	121,775	3,055	16,800
1940	349,400	130,160	180,350	16,900	13,020	144,580	113,210	11,600	17,070
1941	380,350	121,905	229,195	20,100	-	117,750	98,920	10,810	5,350
1942	384,180	118,450	238,650	14,300	3,000	124,900	104,355	13,325	4,500
1943	403,300	167,070	199,850	21,650	5,000	99,780	80,780	16,500	-
1944	436,970	178,150	217,600	20,500	10,170	138,500	115,775	19,975	-

1/ Utilization of quantities sold. Does not include quantities used by farm households.

2/ Canned and other processed, except dried.

PEACHES

PRODUCTION AND UTILIZATION IN CALIFORNIA AND IN WASHINGTON AND OREGON COMBINED 1914-44

FROM TABLES 10, 11 AND 13

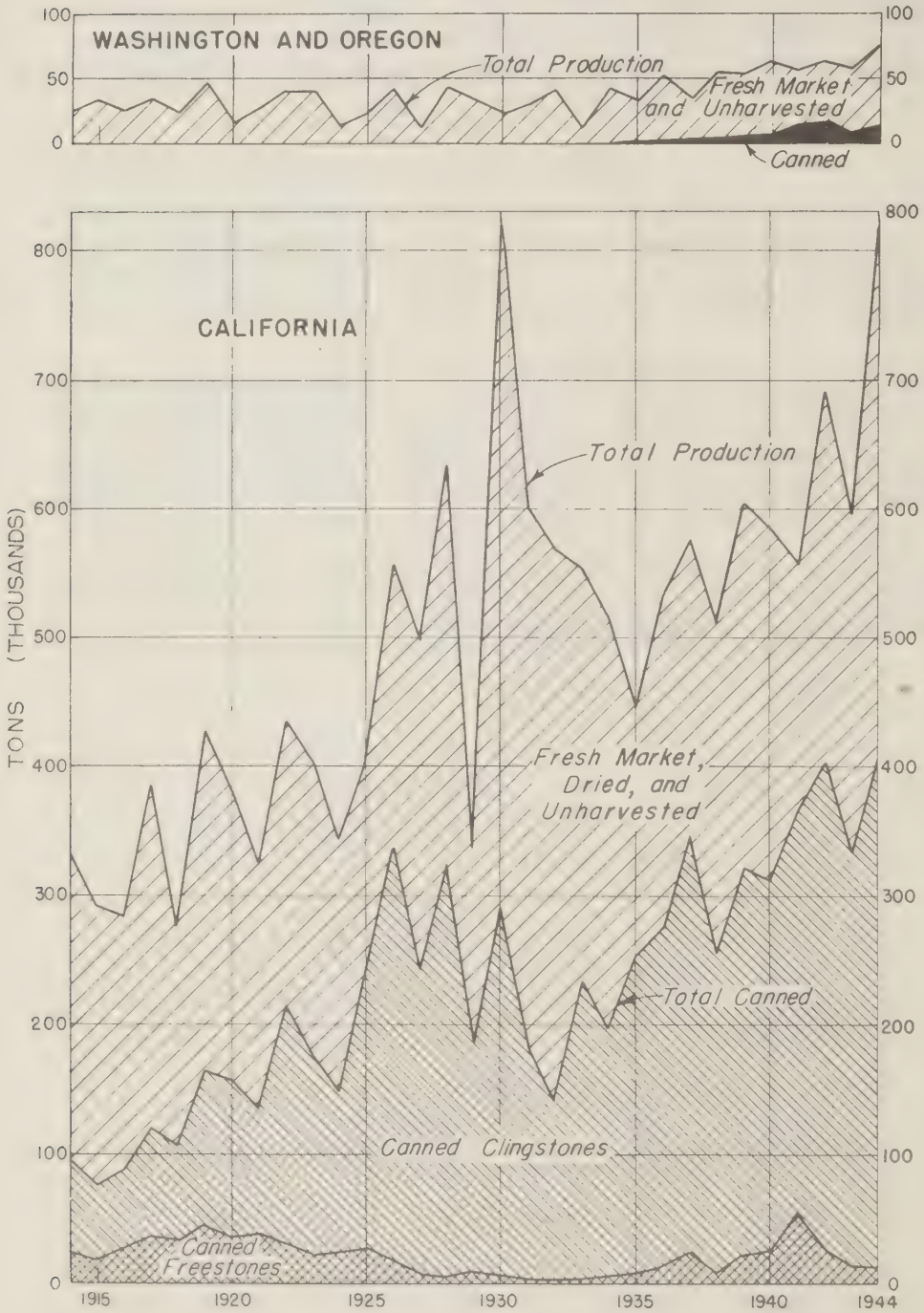


FIG. 18

PEACHES FOR CANNING

SEASON AVERAGE PRICE PER TON RECEIVED BY GROWERS IN WASHINGTON, 1937-44, AND IN CALIFORNIA (CLINGSTONES AND FREESTONES) 1914-44

FROM TABLE 14

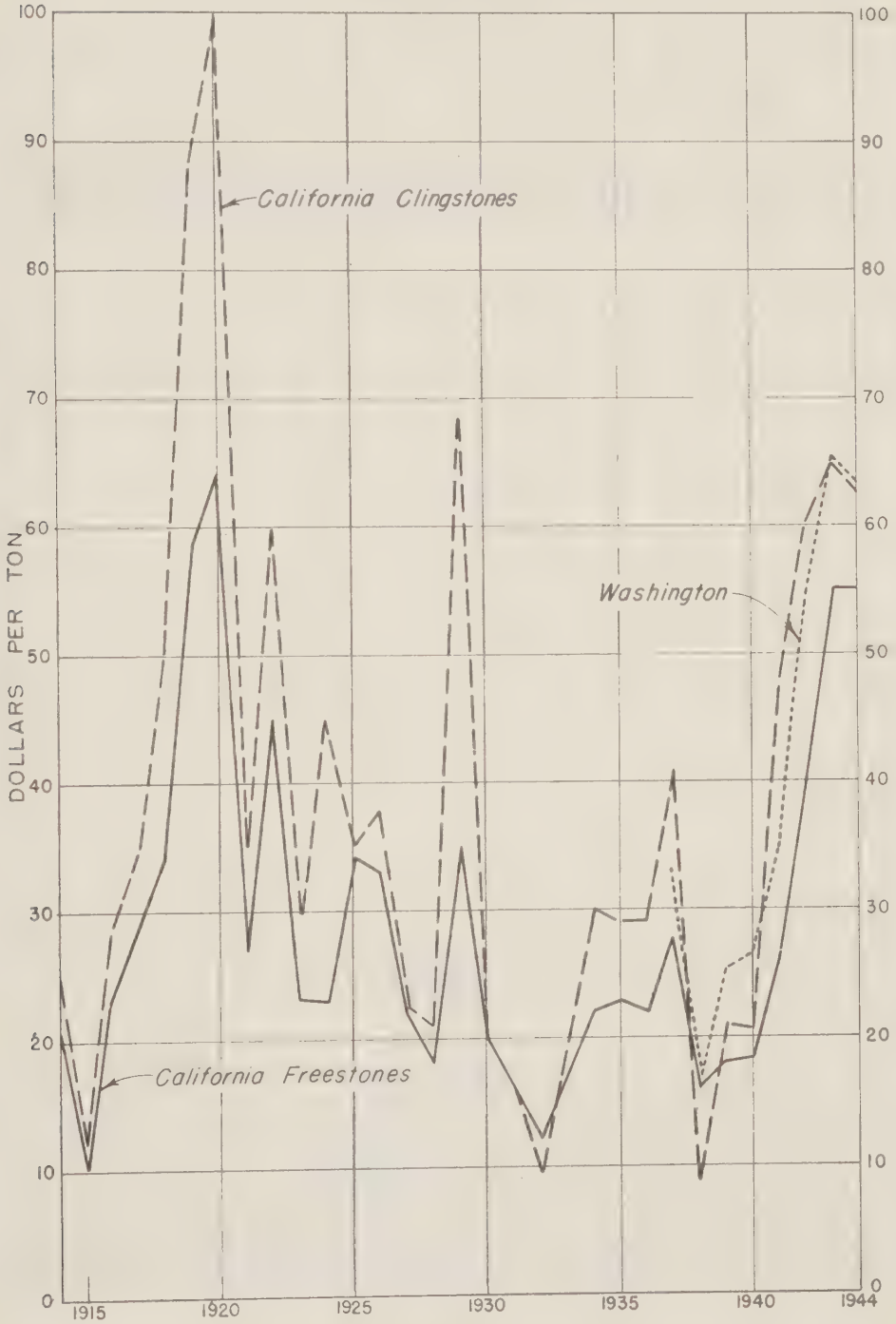


FIG. 19

APRICOTS

UTILIZATION OF PRODUCTION IN WASHINGTON AND CALIFORNIA, 1929-44

FROM TABLE 16

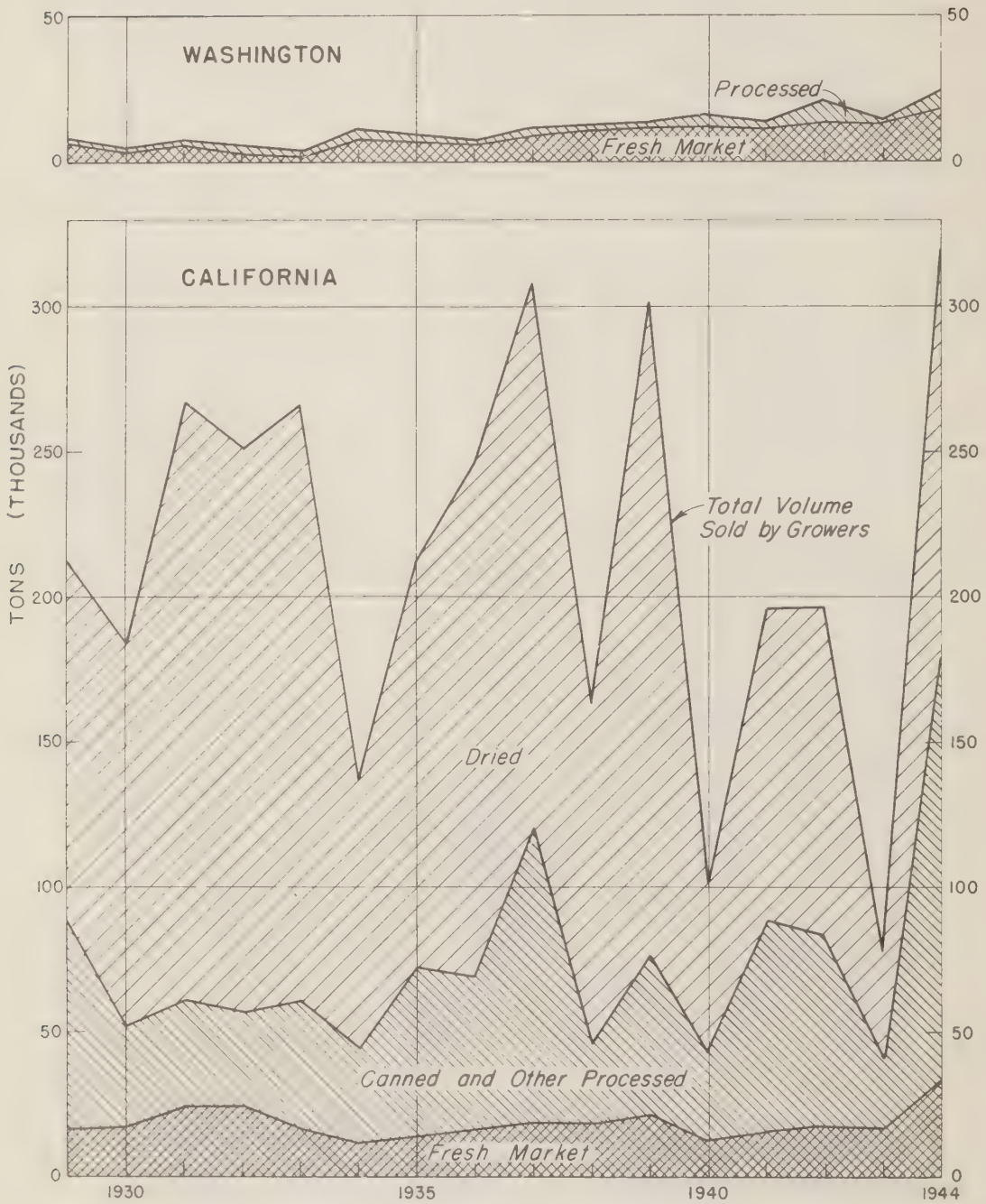


FIG. 20

APRICOTS

SEASON AVERAGE PRICE RECEIVED BY GROWERS, FRESH MARKET AND CANNED, WASHINGTON AND CALIFORNIA, 1929-44

FROM TABLE 15

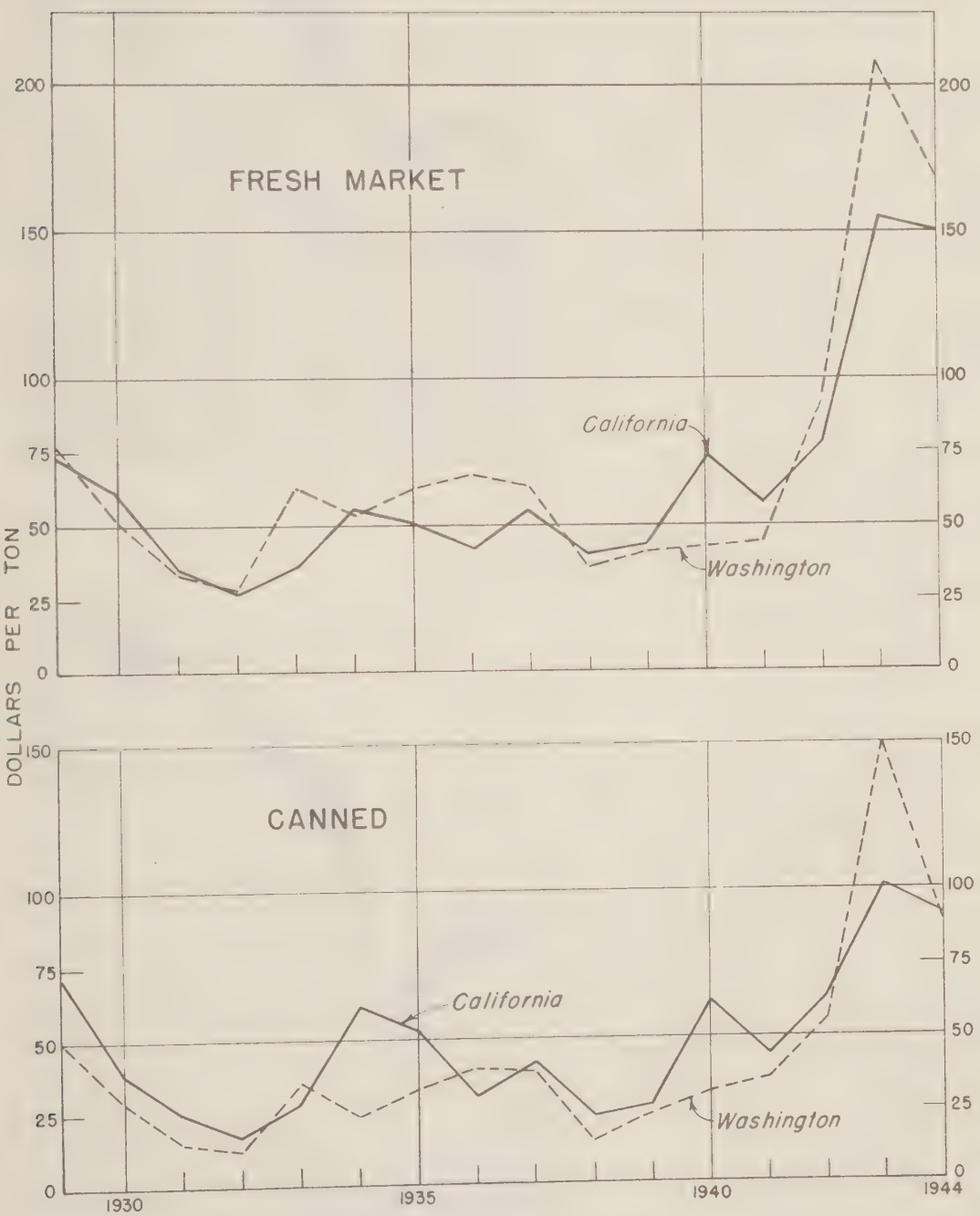


FIG. 21

CHERRIES

PRODUCTION OF ALL CHERRIES, 1925-44; UTILIZATION OF SWEET CHERRIES, OREGON AND WASHINGTON, 1934-44

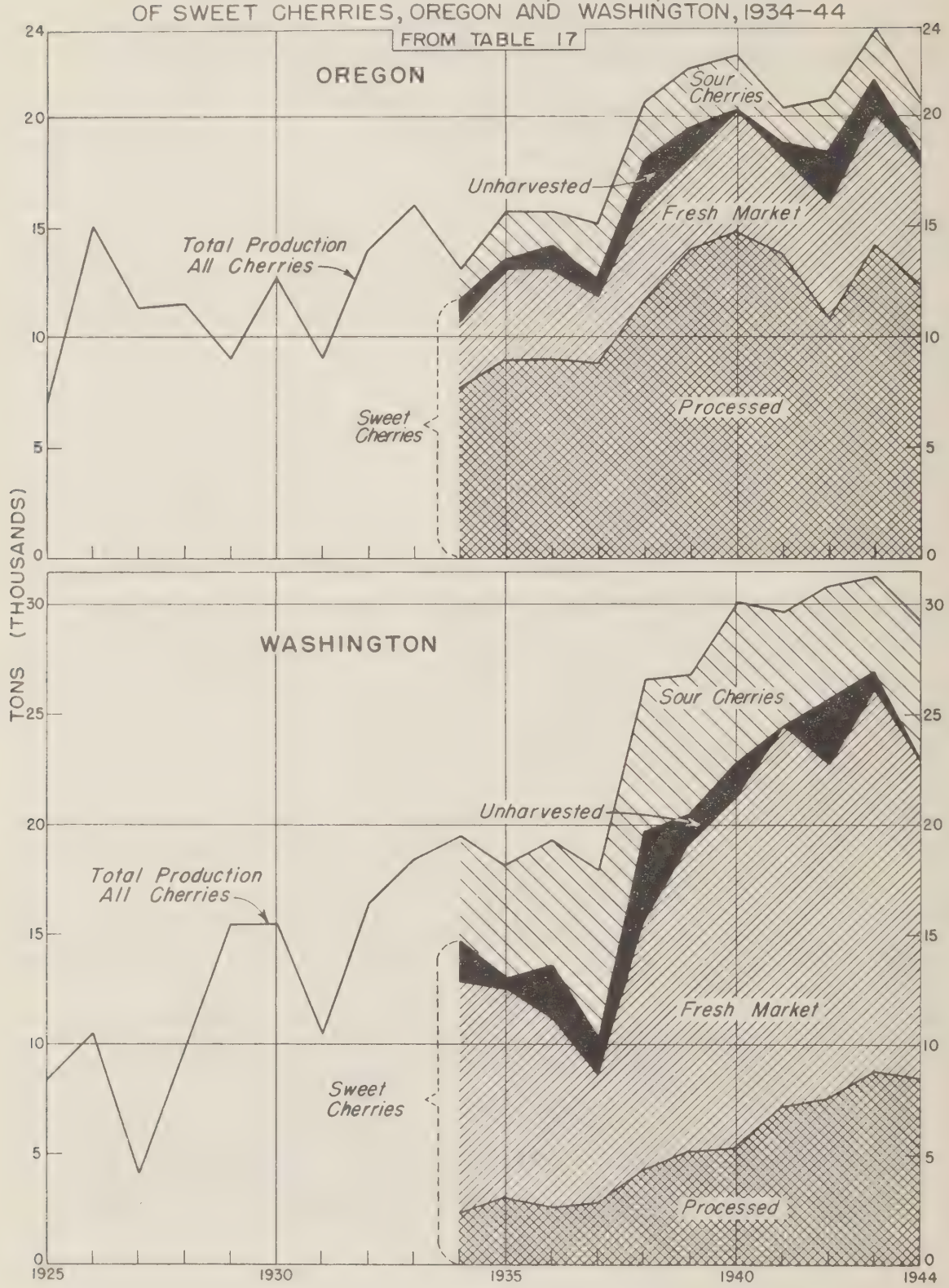


FIG.22

CHERRIES, SWEET

SEASON AVERAGE PRICE PER TON RECEIVED BY GROWERS, UNITED STATES ALL UTILIZATION, 1925-44, AND WASHINGTON-OREGON FRESH MARKET AND PROCESSING 1938-44

FROM TABLE 18

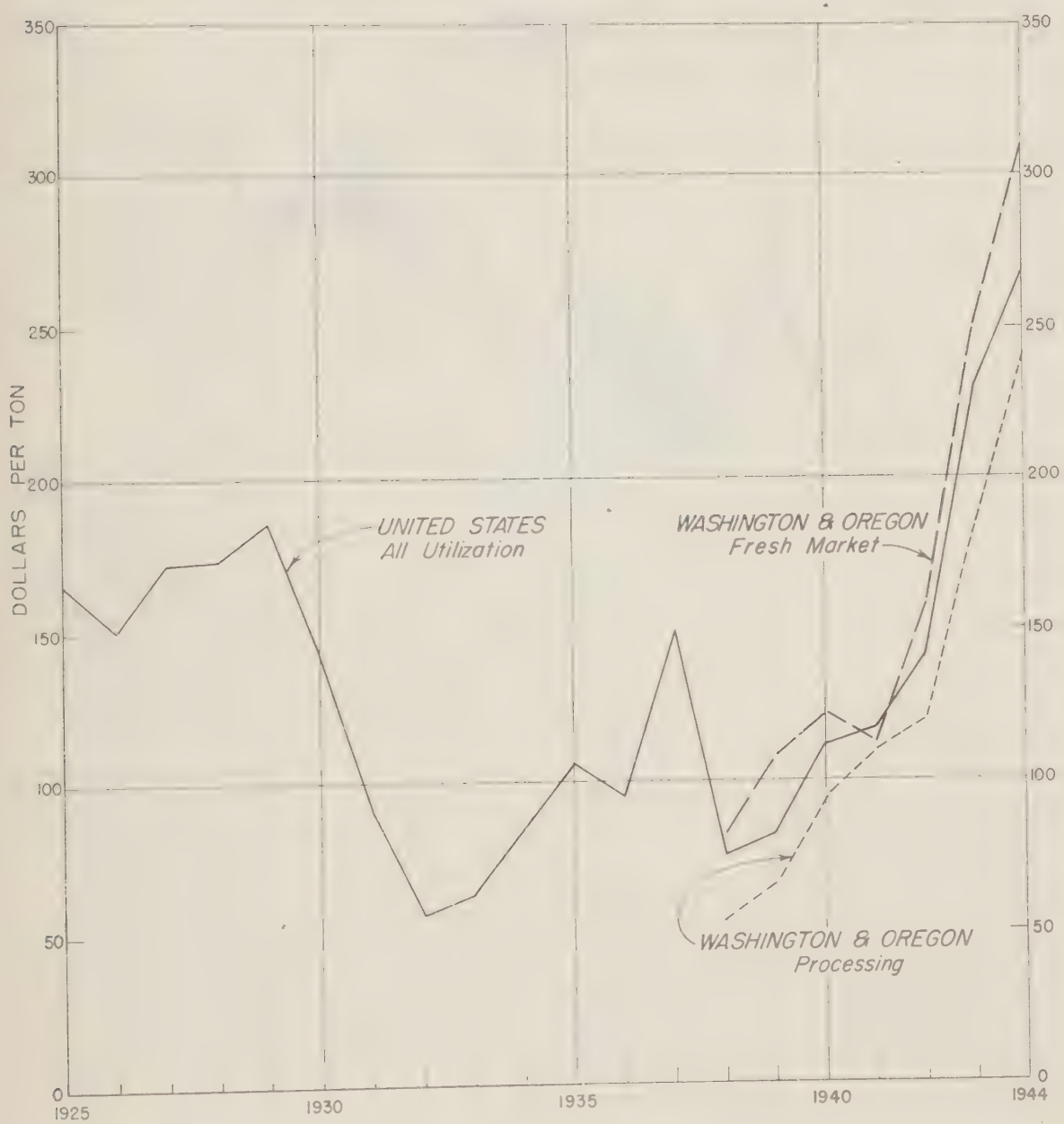


FIG. 23

PEARS

UTILIZATION OF PACIFIC COAST BARTLETTS
WASHINGTON, OREGON, AND CALIFORNIA, COMBINED 1925-44

FROM TABLE 20

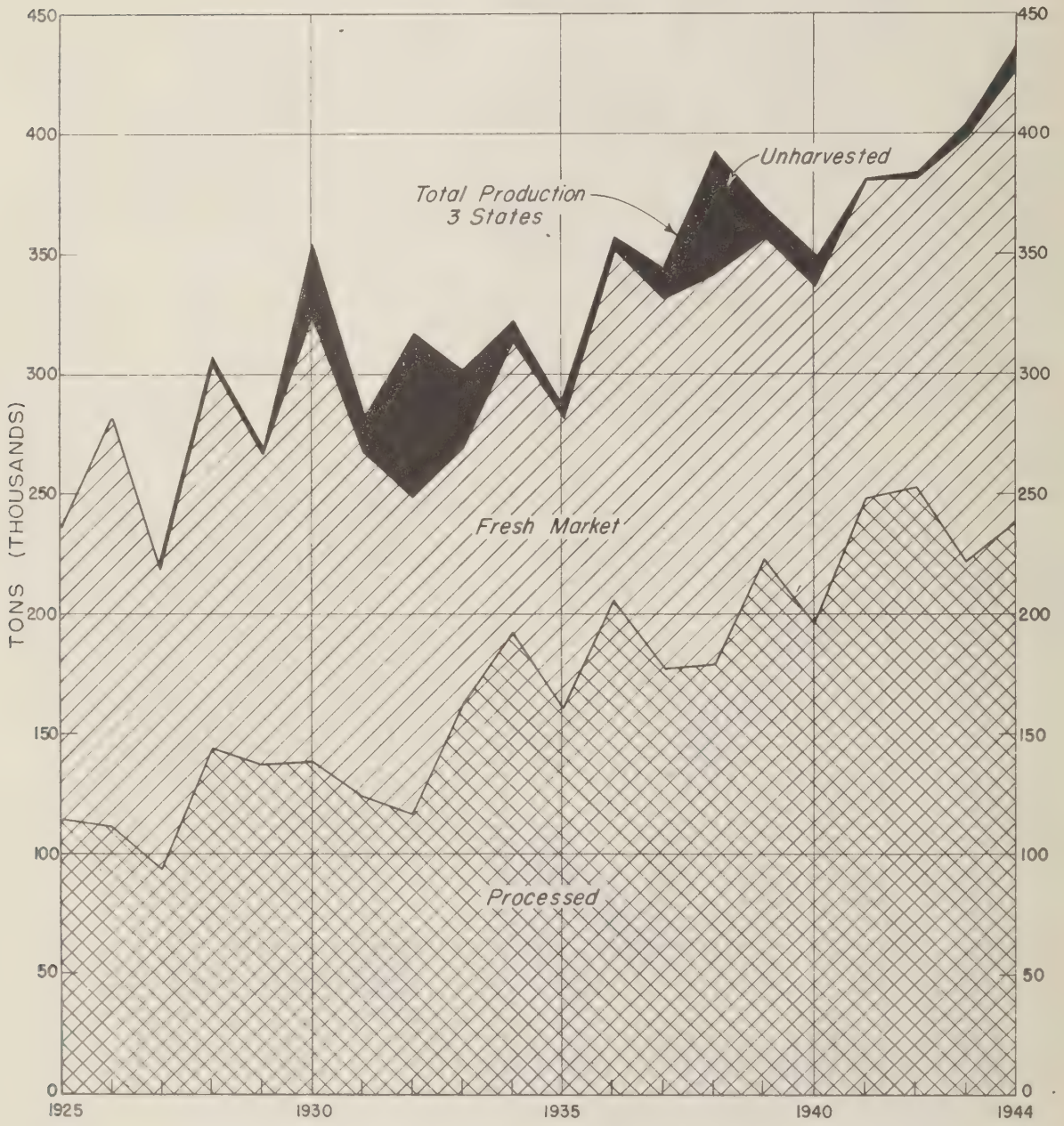


FIG. 24

PEARS

UTILIZATION OF PACIFIC COAST VARIETIES OTHER THAN BARTLETTS
WASHINGTON, OREGON, AND CALIFORNIA, COMBINED 1925-44

FROM TABLE 20

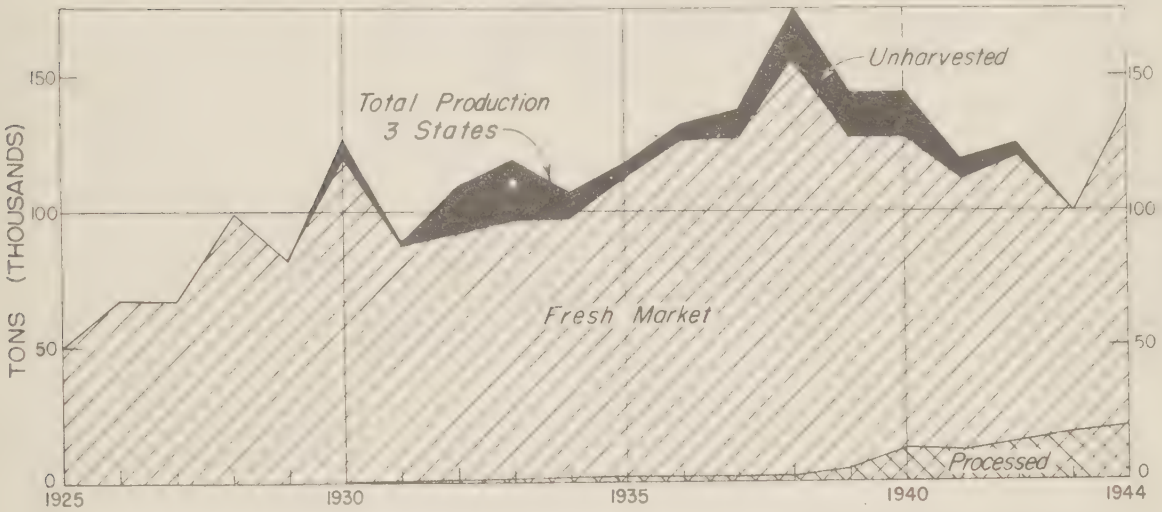


FIGURE 26

PEARS

SEASON AVERAGE PRICE PER TON RECEIVED BY GROWERS
IN WASHINGTON, FOR BARTLETTS AND FOR OTHER VARIETIES, 1925-44

FROM TABLE 19

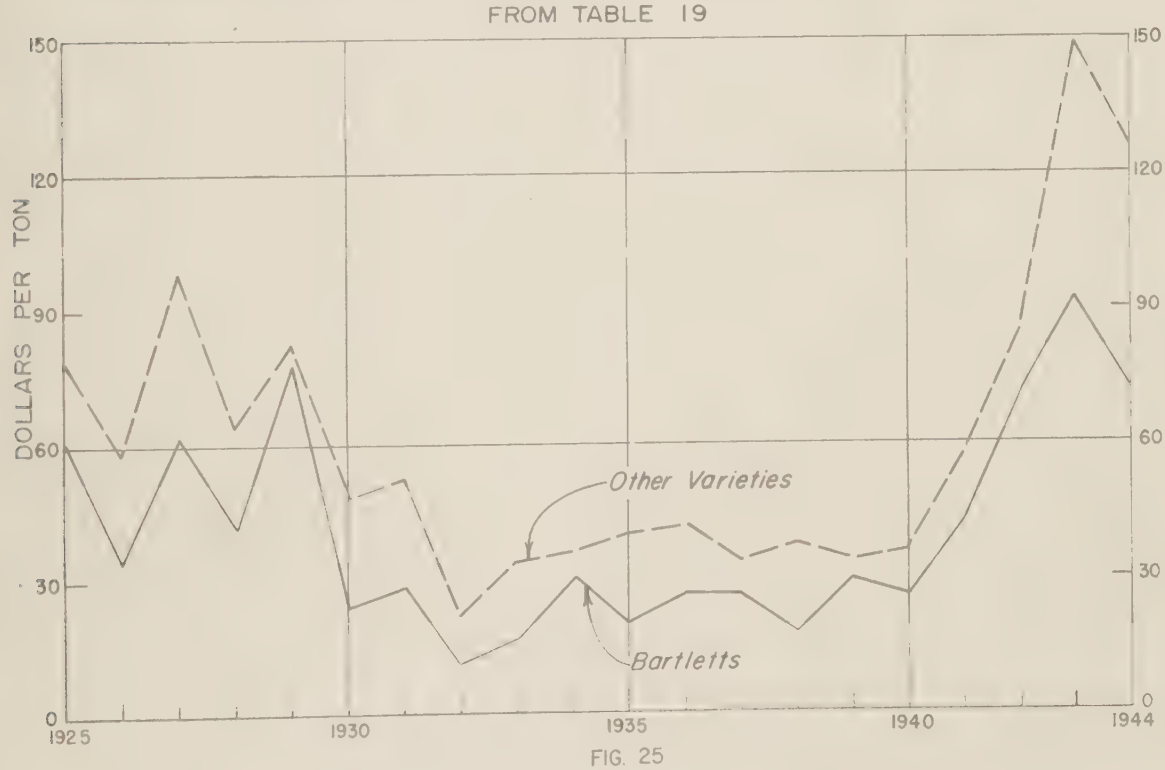


FIG. 25